

## Nigerian students face tough line on fees

by Maggie Richards

Universities and polytechnics are beginning to take a tough line on obtaining prompt payment of tuition fees from Nigerian students.

Evidence of more stringent regulations governing the payment of fees by the Nigerians came this week from Reading University, which is now demanding payment in advance before students are registered or re-registered on courses.

The United Kingdom Council for Overseas Students has also confirmed that other higher education institutions are taking similar action though Reading appears to be the first to have formally revised its admissions policy.

This follows last week's claim by Professor Tam David-West, a senior Nigerian education commissioner, that more than 100 students were flitting away their grants on luxury goods. The students, he alleged, were using their Nigerian television sets, stereo systems and other expensive items.

An angry denial of the claim came from the National Union of Students which said that the payment of grants had left some students penniless.

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At Reading a spokesman for the university said: "We are taking action on the basis of the experience we have had. There have been a number of bad debts. We have had a very long correspondence with the authorities in Nigeria, but unfortunately this has not produced any results at all."

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The university, which has one of the largest overseas intakes in the country, has encountered cases in which students transferred from degree to diploma courses and were then required to repay their grants. Nigerian students have not been involved.

On the issue of the Nigerian students, an NUS official commented this week: "While we sympathize with universities and polytechnics in the problems they face, we think to take such a strong attitude is rather intolerant. This is not a problem caused by the students, but rather the responsibility of their government."

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## Astronomers face jobs shortage

by Robin McKie  
Science Correspondent

A manpower study of astronomers, prepared by the European Science Foundation, has revealed that the large numbers of astronomy post-graduates now qualifying each year will have great difficulties in finding posts.

The report shows that the number of new PhDs in astronomy throughout the EEC's 16 member nations reaches about 220 each year. But there are only about 50 post likely to be made available in coming years.

"These figures show that the subject of astronomy is attractive to a large number of students but also that many of these students will have to continue to find employment in fields and activities outside astronomical research," the report adds.

The study warns that future training of astronomers will have to be adapted to cope with the fact that astronomical research will not necessarily be the future activity of

trainees. In Britain, it is stressed that the high technological competence of young astronomers, involving their work with computers, electronics and communications, is considered to be a reasonable path to other employment.

This view is backed by ESP figures which show that only 28 per cent of United Kingdom astronomy PhD graduates remain in that area of scientific research, the rest find jobs in school or college teaching, government work or industry. This compares with Germany where 60 per cent of all PhDs remain in astronomical research, while in Greece and Yugoslavia, the figures are more than 70 per cent.

The 220 PhDs awarded each year in Europe represent a yearly increase in the total of postgraduates of about 9 per cent. This compares with the United States, where about 180 PhDs are granted each year, an increase of about 14 per cent.

This greater rate of increase in the United States where there are about 3,300 astronomers is due to the larger numbers of astronomers in Europe—about 2,400. The num-

ber of astronomers per million inhabitants in Europe is 65 as against 5.9 for the United States. The figures for individual European nations reveal that there are almost 13 astronomers per million inhabitants in the highest ratio in Europe and the lowest in Germany.

These high figures represent a broader definition of astronomer to include plasma physicists and other scientists who use astronomical equipment and techniques in their work. On the question of education, the report indicates that there is no particular shortage in growing number of space-borne equipment and instrumentation only developed for the previous 50 years of telescopes and astronomical equipment in Europe, it adds.

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## Now MSC hopes to help the working young

by Patricia Santinelli

Vocational preparation as a right for all working young people is one step nearer with the announcement this week of a joint Government and Manpower Services Commission study into ways of extending and improving such arrangements.

The Government is already committed to introducing a statutory system of awards for all 16-18-year-olds in full-time education, designed to mitigate the financial hardship which staying on may entail for poorer families.

But it is extremely concerned that young people who start work at 16 are in jobs where organised education and training are not common. As a result these youngsters are not receiving adequate preparation for a future in which changing job requirements will put a premium on adaptability.

The Government's long term aims are to offer all young 16-18 year old people in employment the opportunity for adequate preparation. Next year it intends to publish proposals for moving towards this goal in a White Paper surveying the whole range of education and training policies for the 16-18 age group.

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## Ulster troubles blamed for drop in Coleraine numbers

by David Jobbins

Northern Ireland's troubles are deterring school-leavers from the rest of the United Kingdom from trying to get into the New University of Ulster at Coleraine.

Potential students are showing a marked reluctance to apply for courses at the university, which was founded in 1968.

Instead of 2,200 students, only 1,770 were studying at Coleraine in 1977/78, according to figures given to the House of Commons public accounts committee by a senior civil servant.

In evidence to the MPs, Mr Arthur Brooke, Permanent Secretary at the Northern Ireland Office, gave three reasons for the shortfall, which first became apparent in October 1972.

The first was that forecasts of the numbers of 18-year-olds wishing to go to university had levelled off, rather than rising in line with the predictions of the Robbins and Lockwood committees.

But he added: "We were rather downcast upon students coming from Great Britain to Northern Ireland—and our disturbed times have discouraged them."

Also Ulster students had increasingly tended to go to universities outside the Province in recent years. The shortfall in numbers forced

the shelving of the third of the university's planned courses to 3,400 students.

The plans were set out in February 1975—but no more than £144,472 had been spent on special fees.

The go-ahead for proposed tender documents was given in July, 1975, but the department felt the university's policy of not accepting students from outside the province should be exempted.

Officials felt it would not have been possible then to accept students from outside the province.

Even if preparation of the courses had been stopped in February 1975, they would still have to be paid for. The cost to go ahead was "probably" right one to take, Mr Brooke said.

But in his report, Mr Brooke said a decision to stop preparation might have been taken at the end of 1973 when the fall-out expected student numbers had become clear. It should have been possible then to reduce the number of students in the province.

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## Quota policy brings course closure fear

by Peter David

Successful courses run by the Polytechnic of Central London language school may be forced to close as a result of the Inner London Education Authority's policy on overseas students.

The ILEA has so far refused a request by the polytechnic to specialise courses at the language school should be exempted from the authority's policy that by 1980 courses should not run with more than one-third of their students from overseas.

Courses singled out as being special threats include those teaching English as a foreign language, a high-prestige Diploma in English, a Diploma in English Language and a level Russian from scratch.

Mr Peter Newmark, the polytechnic's dean, says that the policy is "ridiculous" when he compares the language school with the courses in English as a second language and to courses in English language schools.

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## £8 a week to stop wastage of potential HE talent

by Simon Midgley

A large untapped pool of able young people who could benefit from higher education still exists in spite of the massive expansion of the universities since the Robbins report 15 years ago, a new research study has found.

Grant aid of £8 a week to 16 to 19-year-old pupils could help to alleviate the severe wastage of talent in the untapped pool of ability by encouraging more to stay on at school, it says.

The survey reveals that almost half of the top 10 per cent of able pupils had no intention of going on to higher education and more than 20 per cent were not even intending to stay on at school to study for A levels.

The authors conclude that "a very considerable reserve of talent still exists among boys from every educational group other than professional and among girls of all groups including the professional". They also discovered that the influence of external factors such as the family's social class on educational plans was still very strong.

Mr Oliver Fulton and Mr Alan Gordon of Lancaster University's

Institute for Research and Development in Post-Compulsory Education (IPCE) announced their findings at the Fourth International Conference on Higher Education in Lancaster this week.

Their study—essentially a replication of work conducted by the Robbins Committee—was based on a substantial survey of 15-year-olds and their educational and career plans.

Using a verbal reasoning test to measure academic potential, the authors found that 70 per cent of the boys and 61 per cent of the girls with fathers in non-manual occupations who scored highest on the test were intending to proceed to higher education.

However the comparable group of children of manual workers, whose measured ability showed to be quite adequate at least for A-level work, showed far lower levels of ambition. No fewer than 46 per cent of the boys (girls: 26 per cent) intended to leave full-time education and 47 per cent of boys (girls: 42 per cent) did not expect to take A level or equivalent courses.

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## To every thing there is a (silly) season

by Ngao Crequer

The problems of Malawi footballers, midwives, Gosforth dancers, bishops and atom smashers now recede into the distance as universities prepare for the more mundane task of educating students.

Since July universities have accommodated a carnival of acts known in the trade as conferences or summer schools as part of their "silly season" programme. Not so silly when it is pointed out that such bookings have earned at least one university an income approaching £1m which goes towards keeping down student costs.

Kent University hit the headlines because it hosted 450 bishops for the Lambeth Conference. It had taken two years of planning and the university had to provide for 100 press, and sound and radio broadcasting staff.

But the other 12,000 delegates who attended 170 conferences on the campus did not get quite the same publicity. The Royal College of Midwives—all 450 of them—celebrated their 96th annual conference. The Royal Society of St George Cricket Club from Canada availed themselves of the facilities, not at the same time as the Californian vendors football team.

Then there was the International Workshop on Cynical Metabolism, the Pentecostal Ecumenical Conference of church leaders (very religious they are at Canterbury) and currently 1,500 senior citizens on a package holiday.

Mr Stephen Ware, College Services Manager said: "We are turning over about £400,000 this year in the 16 unusable weeks of the vacation."

But for sheer spectacle you could not beat the conference by Golden Wonder Ltd., at Reading University in July. As a spokesman said, "The porters were regaled with giant men and squinted ladies with legs and insomniac wandering round offering them atom smashers, their latest fun food. It is a kind of crisp. It makes a change from students and rent officers."

Other visitors included Malawi and Maltese footballers (separately), language schools and the British Association for Crystal Growth. Lancaster has had the Quakers, veterinary surgeons, the mini-Olympics for the disabled and psychiatrists. But now it is back to conventional student life.

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## Qualified social worker output shows steep rise

by Peter David

The number of students awarded the Certificate of Qualification in Social Work each year has increased by 60 per cent since 1972, according to the Central Council for Education and Training in Social Work.

Statistical returns from universities and polytechnics show that 3,300 students successfully completed CQSW courses in 1977, compared with 2,183 in 1972. Intakes for such courses rose from 1,981 in 1976 to 4,039 in 1977. The council points out that this brings training growth almost in line with the rate of expansion recommended by the government's Birch report in 1976.

Intakes into the lower-level Certificate of Social Service (CSS) courses also increased between 1976 and 1977—from 227 to 510. The increase in recruitment to the new courses offset a fall-off in admissions to social work courses which are being phased out—the Diploma in the Training and Education of Social Workers and the Certificate in the Residential Care

of Children and Young People and the Certificate in Residential Social Work.

The first 71 students to pass the CSS received their awards in 1977. Students starting post-qualifying studies in the council's new programmes nearly trebled from 61 in 1976 to 169 in 1977. Of the non-qualifying social work courses approved by the CCETSW, the number of Preliminary Certificates in Residential Care (PRC) increased from 1,087 in 1976 to 1,393 in 1977, while the number of in-service "statements of attendance" dropped slightly from 3,247 to 3,044.

Comparisons of sources of financial support for CQSW students between 1976 and 1977 show an increase in local education authority grants from 379 to 483, a drop in Home Office sponsorships of probation students from 580 to 398, an increase in other central government grants from 179 to 903 and an increase in employer awards from 1,653 to 1,887.

Students financing themselves privately nearly doubled in number from 60 to 111.

## Literacy campaigner honoured

The man primarily responsible for nurturing the adult literacy campaign through its formative years, Mr William Devereux, has been appointed to honorary life membership of the National Institute of Adult Education.

Mr Devereux, director of the Adult Literacy Resources Agency until its demise last year, spearheaded the campaign to increase literacy tuition for adults throughout Britain.

Under his direction, the number of literacy students rose from 5,000 to almost 70,000 at the height of the campaign in 1977. This year, more than 100,000 students have been helped since the literacy programme began in 1975.

He was also instrumental in persuading the Department of Education and Science to give financial support to a continuing central focus for adult literacy through the Adult Literacy Unit, which was established earlier this year.

Announcing Mr Devereux's appointment to honorary life membership of the institute yesterday, Mr Arthur Stock, director of the NIAE, said: "Bill Devereux was the ideal person to carry through this great adult basic education innovation. In no other sense he founded the most open college of all."

Mr Devereux becomes only the sixteenth life member to be appointed by the institute. During his three years as director with the resource agency he received an OBE and, more recently, an honorary degree from the Open University.

Adult literacy tuition is now available in 104 local education authority areas in England and Wales, and it is estimated that some 70,000 students are at present undertaking literacy studies.

## Reading appoints two new deans

Two deans have taken office at Reading University this month. They are Professor V. W. J. Wood, dean of the science faculty, and Professor William Biggs, dean of the urban and regional studies faculty.

Professor Haywood, head of the botany department, is a former associate professor at the Botanical Institute, Madrid, and has also lectured at Liverpool University. He is a taxonomist concerned with the classification of plant groups, and has recently been concerned with setting up a botanical garden at Maricao, Venezuela, for which he is the chief external advisor.

Professor Biggs, head of the construction management department, has lectured at Cambridge University's engineering department and has also worked in industry. He has spent periods as visiting professor at Waterloo University, Canada, and Illinois University in the United States. He came to Reading in 1973 as professor of building technology.

## Law students may have to look elsewhere

Increasing numbers of law graduates may have to consider alternative careers as it becomes more difficult to secure employment within the legal profession, warns the Appointment Service report for 1976/77 of the University of Kent at Canterbury.

The reports says that the outstanding area of job difficulty experienced by last year's graduates in addition to the traditionally oversubscribed occupations, was the legal profession. Of the university's 1977 law graduates only nine out of 25 on the course for the Law Society Qualifying Examination did not find articles arranged, and only two had started their articles service more than four months after graduation.

The report says: "It is significant that those who reported success in finding articles had made their arrangements at least a year before they graduated. Applications for Law School places need to be made very early indeed."

The indications are that there will be difficulty for some time and a greater proportion of men and women studying for law degrees in future may find they need to consider alternative careers—of which there are several—including some with a significant legal content."

The report does not examine the reasons for fewer job opportunities in the legal profession although it suggests that the problem has been further increased this year by cuts in local government expenditure which often mean that grants for professional training courses, discretionary on local authorities, have not been available.

Another area where students are experiencing problems is local government service.

## Training chances for engineers

A new directory of undergraduate training opportunities in electrical and mechanical engineering is to be launched by the Schools Liaison Service, an organization run jointly by the Institution of Mechanical Engineers and the Institution of Electrical Engineers.

The aim of the new directory, called *Training Opportunities*, is to enable firms to inform school students about the range of training opportunities available. The Schools Liaison Service claims that many potential engineering students are deterred by the difficulty of finding information about industrial sponsorships.

The new publication, modelled on *Current Vacancies*, run by the Central Services Unit for Universities and Polytechnic Careers Services, will be updated four times a year. It will be issued free of charge to all careers offices and schools with sixth forms.

## Responses to 'HE into the 1990s' CBI savings plan seeks cut in course lengths

by David Jobbins

Some university arts and social science degree courses could be cut to two four-year years, the Confederation of British Industry suggests, among other ways of avoiding giving more public funds to higher education if student numbers rise.

The CBI, representing Britain's leading employers, is implicitly opposed to Britain's limited resources being injected into higher education unless there is an overwhelming case for it.

"Education cannot enjoy immunity from the financial constraints and imperatives that govern the rest of the nation's activity—including that of industry and business", it says in a response to the Government discussion document *Higher Education into the 1990s*.

The CBI's overall suggested strategy involves much better use of existing facilities in ways which imply major changes in the way institutions are run—and a switch towards vocational training.

"The majority of the CBI's members believe there should be less concern with unrestricted freedom of choice as the basis for providing higher education courses as a whole, and more regard for courses oriented generally towards vocational needs."

The CBI also demands tougher entry requirements, based not just on academic qualifications but on potential undergraduates' breadth of achievement, motivation and personal qualities.

"Many employers have doubts about the motivation of a number of students accepted for degree courses, and their wish and ability to benefit from this kind of higher education", it says.

A stronger vocational tinge is urged in a broader use of advanced forms of higher education. Rather than expansion of courses which do not have practical application, the first priority should be to fill empty places on ones which do.

A movement from the arts to

certain social sciences and from pure to applied science would be more in line with job opportunities in commerce and industry, the CBI says.

The CBI also suggests that further broadening of science-based first degrees should receive encouragement. A strong emphasis should continue to be placed on business education.

"The shift of emphasis is necessary not only because of an existing shortage of vocationally oriented graduates of quality, but also because it is extremely difficult at any time to make up for such shortages by retraining graduates in pure science as technologists."

The CBI also argues for a greater amount of staff sharing among similar departments of different institutions within the same area. It opposes expansion of staffs, and rejects the claim that an staff would lead to lower educational standards.

The reduction in the length of some non-vocational university degree courses to two years is one forward to deal with any short-term increase in numbers. There is no real need to develop further the Diploma of Higher Education against better-established and proven courses at HNC/HND or equivalent levels," it adds.

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A movement from the arts to

## Two tier system with centres of excellence proposed

by Maggie Richards

A two-tier system of university education, with first degree work concentrated in certain institutions and research and higher degree studies hived off to new centres of excellence, is being advocated by Kent's education authority.

In its reply to the consultative document the authority also recommends directing the polytechnics towards more vocationally oriented courses and questions the fundamental assumption of the Brown Paper that the peak intake of the 1980s will be followed by a steep decline in student numbers during the 1990s.

Increased numbers of overseas students and mature students seeking retraining or additional qualifications could conceivably mean an extra demand for places during the 1990s, above the levels predicted by the DES, the authority suggests.

Urging a wider examination of educational needs for the future, it comments that the document is based on the traditional pre-war model of the English education system rather than seeing university provision within the broad context of its relationship to national needs. "Priorities should be reviewed

over the whole of the system. There is a need, for example, to examine whether higher education in its traditional form could continue to enjoy a consumer element of total resources (as seems to be assumed) or whether more should be done to divert substantial resources towards the development of commercial, and other vocational skills, to serve the nation's industrial and commercial bases."

Arguing for a more flexible approach, Kent outlines an alternative structure based on a two-year more generalized degree or diploma course, followed by a two-year specialized programme for a higher qualification equivalent to a master's degree, and two years of further study towards a research doctorate.

Perkins of employment, it suggests, could be inserted between each stage.

Constructing a new institutional framework, the authority proposes the creation of higher education establishments catering solely for students on the initial two-year courses. The new 'centres of excellence' would organize all further studies. The new system might co-exist alongside the present pattern.

## Overseas students 'ignored'

Overseas students are conspicuous by their absence in the Government's consultative document the United Kingdom Council for Overseas Student Affairs has told the DES.

The council says that the issue of overseas student numbers is raised in a "second-order question" which has profound implications for the system. "In any projection or appraisal of higher education into the 1990s overseas students are an essential factor which should not be ignored in isolation", the council warns.

The council says that the imposition of quotas on overseas students were brought about by pressure on resources and by any decrease in demand from overseas. As a result, quotas and high fee levels will discourage some demand, "but it is still highly probable that if in the near future the demand from qualified applicants from abroad would ensure an increase in overseas and therefore total student numbers."

UKCOSA argues that provision for overseas students and for home students from recently settled immigrant groups are both essential and "mutually supportive".

## News in brief

### Scots dons' legal threat on wages

Lecturers at colleges of education in Scotland are threatening to take legal action to force local authorities to raise wages because of their failure to do so.

The Scottish Further Education Association, which claims to represent half of all college lecturers, has already taken legal action in the dispute. The action on wages is part of a wider campaign for better pay and conditions.

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## Local government backpedals on new regional councils

by Peter David

A local government circular urging the creation of new regional councils to coordinate teacher training and higher education has been withdrawn as a result of the decision by the local authority associations to withhold approval of the circular on public sector higher education.

The circular, approved last month by the Council of Local Education Authorities, advised local authorities to begin talks on dismantling the existing regional advisory councils and setting up new bodies called Coordinating, Advisory and Consultative Councils for Further Education.

They would have different boundaries and would lose their responsibility for approving advanced courses in polytechnics and colleges, but they would take on new responsibilities for teacher training, in-service training and induction courses for practising teachers.

Approval was given for the circular at CLEA's annual conference in July, when the Tory-controlled local authority associations looked set to pass the circular by a large margin. Some 100 members of mind, however, members believe that distribution of the circular would

imply acceptance of the Government's recommendations.

Meanwhile, the Association of Metropolitan Authorities is due to take a second look at the Oakes report later this month. Members are expected to consider asking for increased representations on the proposed new national body.

The association is expected to demand revision of the clause in the Oakes report recommending that if local authorities wish they can transfer control of their polytechnics to the national body. AMA officers do not accept that in such cases the local authority should be required to pay a fee to the national body.

Changes in the arrangements for pooling higher education costs in the public sector are also to be considered by the association. A report by the local authority pooling committee recommends altering the existing formula which determines how much each local council contributes to the overall costs of higher education.

The report criticizes the existing formula, where 69 per cent of an authority's contribution is based on school population and 31 per cent on non-domestic rateable value. It suggests a new formula with 80 per cent of the contribution based on the number of local children taking advanced courses, and 20 per cent based on non-rateable value.

## Good and bad marks for public libraries' literacy efforts

by Maggie Richards

Public libraries are praised for their contribution to the adult literacy campaign in a report published yesterday. However, it finds greater efforts are needed to develop the literacy programme.

The report has been established by a working party set up by the Library Association and the Library Advisory Council for England and Wales to study library services for the disadvantaged.

The growth in services provided by libraries to meet the needs of the literacy campaign is described as an "astonishing achievement".

But the report adds: "Nevertheless, our evidence suggests that much remains to be done both in responding to the literacy campaign and in defining a more positive role for libraries in relation to functional literacy and the general encouragement of reading."

"We had the impression that some libraries remain on the fringe of the literacy effort. This is no doubt because the management of the campaign is usually a responsibility of the local authority's adult education section, and in some cases links with the library service are tenuous."

The report outlines four areas in which it is felt improvements could be made:

● It suggests special training for librarians dealing with literacy students and tutors, with schools of librarianship and professional associations providing short courses in all aspects of literacy.

● Libraries are urged to provide more materials—printed and audio-visual—for literacy purposes, with visual aids for literacy purposes.

● The report says the working party found that a significant number of authorities were not providing a library service to meet the needs of disadvantaged groups. Even where a service was available, it was not likely to be reaching more than a fraction of those in need.

The *Libraries' Choice*, published by HMSO, price £2.25.

While the narrow view of a public library as an institution providing merely for those who know what they want has nearly everywhere been replaced by a more dynamic concept of the library's role, the disadvantaged sections of the community often fail to receive their share of the library's resources.

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## Angry authorities reject £10m underspending charge

Local authorities have responded angrily to allegations that they are likely to spend £10m less than the 1978-79 budget in the current year.

The Association of Metropolitan Authorities said this week that the confidential results of a Department of Education and Science survey published last week in *The Times Educational Supplement* were accurate but misleading.

Mr Bob Morris, under-secretary for education at the AMA, said preliminary results of the DES survey indicated that forecasts of the release of teachers for induction and in-service training would probably not be met. But he pointed out that in-service training took many forms.

"In fact, the Council of Local Education Authorities agreed to the survey partly because we do not, for the overall balance between the various patterns of in-service

training in the 104 local education authorities.

"The results so far indicate that well over half the teaching force last year did take part in some form of in-service training."

Mr Morris added that the Rate Support Grant was not a collection of specific government grants for specific purposes. "The forecasts of expenditure on in-service training were simply a small part of the huge annual exercise of ensuring that the global resources available to local government will meet both the discharge of statutory duties and the exercise of discretion by the locally elected L.E.A. in powers acquired by law over many years."

The underspending on in-service training might be partly accounted for by the fact that local government spending on teacher employment, and into working life. What we know the overall balance between the various patterns of in-service

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Overseas

# OVERSEAS TEACHING POSTS

**LECTOR IN ENGLISH (YUGOSLAVIA)**  
University of Pristina. To each English Language to students in the Department of English. Candidates—men only (single or married without children)—should have a degree in English or Modern Languages; TEFL qualification with phonetic component desirable. Salary 7,800 new Dinars per month (currently £1,353 p.a. paid by the British Council in the UK). Free accommodation. Starting date October 1978. One year contract, renewable. 78 UU 84

**LECTOR IN ENGLISH FOR SPECIAL PURPOSES (YUGOSLAVIA)**  
University of Ljubljana. To teach Technical English to university students of science and technology. Degree and TEFL qualification essential, postgraduate qualification in linguistics desirable. Interest in or experience of materials production or ESP. Substantial experience of TEFL overseas essential and recording experience an advantage. Preferred age 30-40. Salary 6,000-7,000 new dinars per month net (present rate of exchange £1 equals ND 35) nonconvertible plus annual subsidy of £1,353 paid by the British Council in the UK. Benefits: Free medical service; employer's portion of superannuation if applicable. One year contract, renewable. 77 RU 148

## ENGLISH LANGUAGE TEACHING ADVISER (THE GAMBIA)

Department of Education and Culture, Banjul; for December 1978 (or earlier).

Duties include lecturing at teacher training college, syllabus and materials design, organizing in-service courses and running the English Teaching Information Centre. Qualifications: Degree from a British university, MA in Linguistics or one year postgraduate TEFL qualification and experience of teacher training in a developing country. Male candidates preferred. Salary: £5,881 to £7,707 p.a. plus 10 per cent Inducement. Benefits: Personal and children's accommodation; medical scheme; employer's share of superannuation; two year Kelt contract. 78 TE 12

Return fares are paid. Local contracts are guaranteed by the British Council. Please write briefly stating qualifications and length of appropriate experience, quoting relevant reference number and application form to The British Council (Appointments), 65 Davies Street, London W1V 2AA.

### General Vacancies continued

**Inner London Education Authority**

## Director—Research and Statistics Group

Salary Range: £9,119.80-£9,692.80 (inclusive of all allowances) (under review)

Applications are invited for the post of Director to be responsible for the Research and Statistics Group set up in 1984. The post has become vacant following the appointment of Dr. Martin Shipman the present holder to a Chair in the University of Warwick.

The Director plays a central part in the provision of information for the Authority and the group provides a comprehensive central statistical service for all branches of the education service. It is also the channel through which the service is kept aware of relevant developments in research. The Director is responsible for initiating and directing the Authority's research activities and for advice on promotion and control of research projects in its educational establishments.

Appropriate qualifications and experience in social science research techniques, preferably in education, are essential.

Application forms and further details from the Education Officer, (EO/Estab. 2A/1), Room 367, The County Hall, London SE1 7PB. Please telephone 01-955 3444 for details. Forms to be returned by 14 September 1978.

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Candidates should have a degree in a relevant subject and a minimum of five years' experience in editing and proof-reading. Applications for recent graduates will also be considered.

**HEAD OF MODUL READING**  
Candidates should have a degree in a relevant subject and a minimum of five years' experience in editing and proof-reading. Applications for recent graduates will also be considered.

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Reports from Vancouver by Clive Cookson, Peter Scott and David Walker

## Conflict over practical training

Third World politicians are liable to turn away from the university to other tertiary sector institutions such as technical and vocational colleges to achieve their plans of economic development.

This warning was given by the conference by Commonwealth academic leaders from the Caribbean and Asia, but a number of interventions by Australian and British participants complaining of competition between universities and polytechnics showed the issue had striking parallels in the developed world where it was compounded by fears of manpower planning by governments.

A clear statement of the issue as such in the developing countries of the Caribbean came from Mr. A. Z. Preston, vice-chancellor of the University of the West Indies. He said: "The notion that the university is the sole repository of higher wisdom and knowledge is ideological anathema to many political leaders who are more interested in the production of manpower to meet needed levels for the management and development of the economy."

They saw "practical training" as a goal and the tertiary colleges as the best place for it.

Mr. Preston concluded the best relation between universities and colleges—and the one prevailing in Jamaica, Trinidad and other islands between the University of the West Indies and local colleges—is one of "creative tension." Other participants were more brutal.

For example, Mr. Richard Griffiths, director of the Inter-University Council for Higher Education Overseas, who has the experience of education in the Commonwealth including membership of the Hong Kong University Grants Committee, spoke of the need to "clothe" the pretensions of the polytechnics and tertiary colleges.

The tendency of polytechnics—especially in Hong Kong—to take on the kinds of academic work that belonged in the university ought to be stopped.

This entered in a lengthy debate on whether to distinguish between polytechnics and vocational colleges on the one hand and universities on the other ought to be maintained.

From the Canadian perspective, Dr. Laurent Isbelle, president of the Algonquin College in Ontario, asserted the universities have usurped some of the proper functions of the community colleges.

Legitimate questions will have to be asked about the place of existing programmes in the universities," said Dr. Isbelle.

For example, the place of programmes such as library science, business administration, physiotherapy, physical education, teacher training, journalism and many others, must be questioned.

Do they not belong in the community colleges, institutions capable of handling such challenges, and so enable the universities to



Sir Frederick Dainton: seething attack

utilize their financial and physical resources in areas desperate for the funds so necessary to support research?

From the British side, the debate produced pessimism—Sir Harry Pitt, the vice-chancellor of Reading University, observed that political power went with the numbers and the numbers did not go with excellence.

But it also produced qualified optimism. Sir Charles Carter, for example, the vice-chancellor of Lancaster University, provided the conference with details of the scheme of cooperation between Lancaster and colleges of education in Lancashire and Cumbria and argued for similar schemes of regional coordination elsewhere.

However, there were obstacles. He noted: "I suggested some time ago that any university council and governing body of the nearest polytechnic should have an overlapping membership, so that at least a few people would know the plans and resources of both institutions. The suggestion was greeted with a stunned silence."

Sir Frederick Dainton, the retiring chairman of the University Grants Committee, used the occasion of the debate to deliver a scathing attack on the whole of itself was "totally mis-conceived," its author, the civil servant Sir Toby Weaver, had shown great "opacity of thought."

Instead there would have been no problem if the colleges had been allowed to call themselves universities, Sir Frederick said. What is in the name of an institution? he asked. The universities have always been a mixed bag reflecting different levels of academic attainment.

What was needed now, he suggested, was some coordinating body between the university and polytechnic sector to "maintain the spectrum" of higher education institutions.

Overshadowing the debate about the relations of universities and tertiary sector colleges was, the



Sir Walter Perry: spirited discussion

growing conviction of academic—at least from developed Commonwealth countries—that modern graduates were very often under-employed when they took jobs.

This was true in Australia. Professor Peter Karmel, chairman of the Australian Tertiary Education Commission, reported that the total number of doctors in his country was 20,000 yet the medical schools were producing 1,400 newly qualified applicants to the medical profession each year.

From Canada, Mr. W. G. Pitman, president of the Ryerson Polytechnic Institute in Ontario, described the passage of his country into the "conservative society" with reduced rates of economic growth and job degree in inappropriate choice.

Instead, Mr. Pitman favoured re-modelling the educational system and joined in a spirited discussion with Sir Walter Perry, vice-chancellor of the Open University in Britain about how any new system should have.

Both emphasized ease of transfer in and out of institutions and maintenance of educational opportunities for adults, but they differed on how specialized the content of courses should be.

Sir Walter was explicit. "Society has a much greater need for people with a general education than for people with a specialized education, but we have failed, at least in Britain, to get this message across to our students or to our colleagues in university teaching."

In his prescription for the future, Sir Walter advocated stopping secondary education in the schools at the age of 16 years, banning research by institutions other than universities, modular courses, and expansion of the route into higher education through further education colleges.

He warned the developing countries of the Commonwealth not to allow themselves to emulate the British preoccupation with specialization at levels as a qualification for university entrance.

## Problems of keeping the balance of power

A finely calibrated balance of power between central and local government in federal systems can protect the autonomy of the universities—but if either party becomes too powerful federal systems can lead to a dangerous erosion of that autonomy.

The general principle was agreed by nearly all the Vancouver delegates. However, they disagreed sharply about the answer to the more practical question of whether universities suffered more from an excess of central or of local power.

The very different experiences of the Commonwealth's two most developed countries with federal systems was at the root of this failure to agree.

In Canada, under the influence perhaps of the United States, the provinces have become increasingly powerful in higher education, much to the disgust of the universities. There, the commonwealth member has become the dominant partner and caused just as much disquiet in that nation's universities.

So it seemed to be a case of the grass is greener on the other side of the fence. Dr. Ian Macdonald, president of York University, Ontario, complained that in the past years a subtle but important shift had taken place in the balance of power between the universities and the provinces.

Although long an exponent of decentralization, he felt a sense of great unease when this was applied to universities. He added: "Universities have become, at least in administrative outlook, much more provincial in their orientation and in turn less national and international. Parochialism has never been a prescription for greatness."

Dr. Macdonald was particularly concerned about two areas: Student exchanges between provinces, which he believed was being inhibited by the present funding arrangements; and the viability of specialized postgraduate level, which required a national or even an international clientele.

Circumstances in Canada today are such that a major objective in education should be the provision of opportunities for Canadians to learn more about all parts of their country at first hand," he added. "This is particularly true of the university student community in terms of its responsibility for future leadership. To support that objective we could be seeking to ensure a national university community by all possible means."

However, another economist, Professor Bruce Williams, vice-chancellor of the University of Sydney, disagreed sharply. He believed that people in Australian universities would look back with nostalgia to the days before 1974 when funding was shared between the Commonwealth and state governments.

He doubted whether the recent

decision to have an official inquiry into study leave would have been shared between them.

Professor Williams added to the role of the University Commission in Australia had been reduced because higher education policy was now effectively made by the Federal Minister of Education rather than by five state ministers.

Another Canadian president, M. K. Oliver of Carleton University in Ottawa, took a less gloomy view of the future of Canada's universities under provincial domination than Dr. Macdonald.

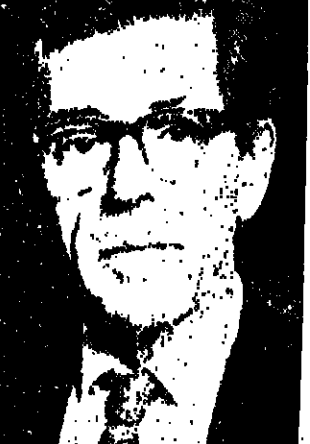
He pointed out that in vast areas like Canada, the United States and India, federal systems of government permitted a degree of mobility for scholars and students that would not be possible if national barriers intervened. "The temptation to yearn for the simplicity of unitary regimes are strong," he added.

But even Dr. Oliver was concerned about the danger signals in Canada. He told the congress the fall in the birth-rate was as the same in all parts of Canada's provinces and Quebec and more so in British Columbia, this could lead to a wide variation in the demographic composition and opportunities for the donor to "provincial promotion."

It was a third Canadian who came closest to summing up the continuing view. Professor Latta Kervin of the University of Laval in Quebec said: "The universities are potentially better off under a federal system because it is more democratic in principle."

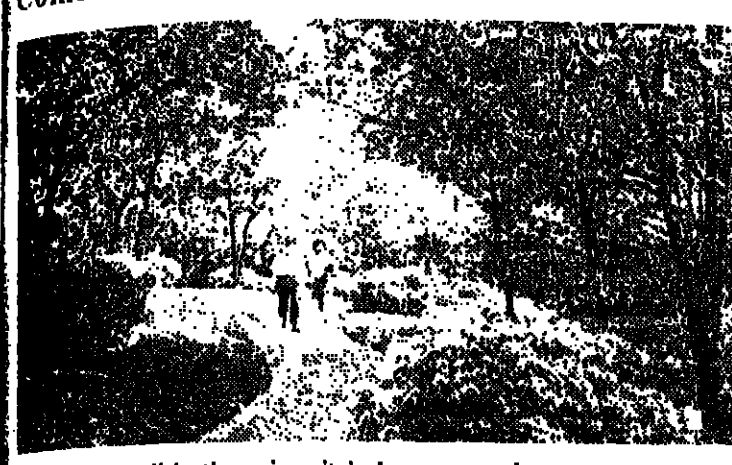
Several levels of government are each responsible to the state voters, which may thereby keep them in check and balance.

"A balanced division of responsibility for the University keeps the citizen involved with university policy through at least two channels instead of one."



Professor Williams: nostalgia

## Commonwealth Universities' Congress



A peaceful stroll in the university's Japanese garden

## Vice-chancellors in mufti on a quiet family picnic

The Commonwealth Universities Congress which was held at the University of British Columbia in Vancouver last week was like its predecessors stretching back to the First World War, very much a private occasion, a quiet quinquennial gathering of the vice-chancellors' club.

At times it was perhaps a little too redolent of the academic gentility that remains such a strong characteristic of universities in these countries which not so long ago were painted red on maps. One doubler among the delegates, the registrar of one of the Commonwealth's more ancient universities, called it "a family picnic."

He quickly explained that such infrequent picnics could not really be frowned upon. Picnic was not a bad word. Salmon barbecues, concerts, boat-sailing, and the like, were all part of the more important of the more rigorous Carthusian intellectual upbringing it was a bewildering occasion.

Yet at a less superficial level the congress was an occasion of high seriousness. Like previous Commonwealth congresses, this one was a belated, it revealed, obliquely but not obscurely, the common concerns of all Commonwealth countries. Ten years ago the theme would have been the strains of expansion or student unrest. This year it was the infinite more complex task of how universities can remain true to their traditional vocation yet meet the new and pressing demands made on them by governments and peoples.

The keynote address to the congress was given by Sir Charles Wilson, former principal of Glasgow University. With twinkling eyes he gently chided the "new relevances" who wished to bring univer-

sities closer to the world of action and practice. With gentle humour he defended the traditional university, arguing that its essential character could be grasped only by intuitive understanding not by explicit definition.

The 600 delegates then split up into five groups to discuss more detailed topics. The first was the world food problems and the universities. Here the papers and discussion were crisp and direct: the issues—population, energy, health—too urgent to encourage existential doubt. But it was also the topic that seemed most distant from the mainstream of the congress.

The second topic was Canada's own: higher education in countries with federal systems of government. Indeed, it could even be called British Columbia's because relations between the provincial government and its three universities there are the most important of the more important on this topic generated into a Canadian-Australian dialogue with tentative interventions by India and Nigeria and the rest of the Commonwealth nowhere.

The third topic was "reconciling equality and excellence." It should have been the most important of the congress, but it turned out to be the most diffuse and disatisfying. Indeed, it managing to surpass the parochialism of topic two by turning out to be not much more than an internal British debate about N and V levels and four-year degrees.

The fourth and fifth topics provided the real meat of the congress. In "the public view of the universities" detailed discussion took place on the relevance of the curriculum to the needs of society, on the relevance of research, and on direct services to industry. Topic five—universities and other institutions of tertiary education—produced some of the best papers, especially from Britain's Sir Frederick Dainton and Australia's Peter Karmel, chairman of that country's Tertiary Education Commission, and stimulated some of the most lively discussion.

Sir Frederick, already demob-happy perhaps because of his imminent departure from the UGC, surprised the British delegates with a root-and-branch condemnation of the binary policy.

To a casual observer it all seemed to have very little to do with the grand theme of the congress. The superficial impression created in Vancouver was one of fragmentation—between the five topics and between nations, especially between the rich old and the poor new Commonwealth.

Yet in a subtle way there was an underlying unity. Again and again the delegates showed how they felt universities in the Commonwealth were under pressure—from governments everywhere but particularly in the Third World and in federal states like Canada itself and Australia; from liberal reform of secondary schools and examinations especially in Britain; from commercial and other entrepreneurial forces like the polytechnics or the colleges of advanced education.

This pressure may be steady rather than intense but it has created a mood of discreet anxiety which underlies nearly all the discussion at the University of British Columbia last week. The Commonwealth universities' response was intuitive rather than explicit: it was a reaffirmation of not only the traditional role of the university, which Sir Charles Wilson displayed in his keynote address.

## Food research must cater for local needs

A warning was sounded by nutritionists and agricultural experts attending the conference that the universities cannot go on relying on the research and development needed to solve the world's food problem.

Coordination with government programmes was necessary, said Professor R. S. Musangi of the University of Nairobi, and from Professor D. W. George of the University of Queensland in New South Wales came the prediction: "University personnel may need to contribute more in governmental and industrial settings than within their own laboratories."

With this emphasis on the need for cooperation between the universities and governments, especially in the less developed countries, came advocacy of local research by universities geared to what Dr. H. Peter Oberlander, a Canadian geographer, called "the direct needs of the society of the day."

On this theme Mr. Sardar B. S. Samundri urged the universities to make large-scale investments in research on food crops—"research meant exclusively for the solution of locally felt needs of society."

Such research work did not absolve universities from their commitment to truth. Dr. Adewale Olanlu of the University of Ife in Nigeria said it was their responsibility always to keep sight of "the whole problem."

"It is incumbent on us to let the politicians as well as the man in the street know the truth," he said.

In their work on new strains of crop, methods of irrigation, veterinary techniques and animal husbandry, the universities of the less developed countries ought to be able to count on help from the long established universities.

Dr. Olanlu urged the transfer of knowledge, technology, expertise and equipment from the one to the other, with the proviso that solutions to agricultural and nutrition problems could only be worked out in the forms and fields of the less developed countries themselves.

A detailed programme for co-operation between the universities, the developed countries and those in the developing Commonwealth countries was set out in the first plenary session of the conference by Sir John Crawford, chancellor of the Australian National University.

This included tackling at the request of developing countries research problems beyond the capacity of universities and research centres there; sharing research with a basic of equality; and offering training in the advanced country in order to accelerate the build-up of research capacity in the less developed country.

Sir John scorned pessimists who argued the imbalance between food and population was a lost battle saying the universities still had a "positive role" to play.

## Strong cases made for and against relevance

The various sessions on "relevance"—with titles like "the relevance of the curriculum to the needs of society" and "the relevance of university education to research"—produced an interesting contrast between speakers who warned in general terms of the dangers of linking university activities too obviously relevant to immediate social needs, and those who gave highly specific examples of cases where universities had made a successful effort to be relevant.

The first category included Sir Peter Noble, principal and vice-chancellor of Aberdeen University, and Dr. Charles E. Beaulieu, president for academic affairs and research at the University of Quebec. The second included Dr. B. C. Matthews, president and vice-chancellor of the University of Waterloo, Canada, who gave an excellent account of the ways his and other institutions are providing services to industry, and one of the very few "outsiders" to address the congress. Dr. Alec Dickson, founder and honorary director of Britain's Community Service Volunteers.

To Sir Fraser, "what is relevant, both to the individual student and to society is what is learnt with a will. It is an illusion to think that you can teach a student to be relevant to life and to society and can be kept relevant in that sense in the future."

The danger of talking about relevance to the needs of society, he said, is that governments, which by their nature tend to make short views, will be obsessed by some "fantasy of instant utility," and prescribe a syllabus to be operated in a structure of credits and qualifications.

It is fair to suggest that the curriculum should take some account of the need for manpower with special skills, Sir Fraser conceded, but "the important thing for the university planning the curriculum and the student choosing his course is to think short-term in terms of the first job the graduate is likely to take."

"Rather we must think long, appreciating that careers will change, that even in a given profession there will be new challenges to acquire later, perhaps in a field undreamed of at the stage of professional qualification."

Sir Fraser said he was worried about the pressures on universities in the developing Commonwealth countries from their governments to introduce specific curricula, "and I am apprehensive about some of the criteria for aid which are now prescribed by the British Overseas Development Ministry, and which increasingly circumscribe the help which we might, in free cooperation with you, extend to your colleagues and students."

Dr. Beaulieu's attitude was very similar. He wanted universities to "give an increasing importance to general education and personal development programmes, programmes centred on independence of thought, an ability to synthesize, and fostering creativity."

Dr. Matthews pointed out that much technology arising out of university research is in such a "raw state" that no industrial company will accept it.

In certain areas, employers show more and more interest in hiring graduates who have a good general education and whom they retain during their careers, preferring this in hiring specialized technicians whose knowledge rapidly becomes outdated and who can become professionals only with difficulty.

His Canadian colleague, Dr. Matthews took the view that the function of a university must extend to the application of the new knowledge it discovers. "Such an extended role for the university has seldom been acknowledged, and certainly has not been generally accepted within universities. We have paid and are paying a price for this neglect on our part—a price in terms of diminished public support for research in universities and fewer opportunities for young researchers upon graduation from our universities."

Dr. Matthews described some of the mechanisms that are being developed at his university and elsewhere to transfer research and technology directly to industry.

Contrary research is rapidly growing in importance in Canada, where industry's own research capacity is relatively small. A university has to accept certain preconditions if contract research is going to work successfully, he said.

For example, the faculty member and the university must recognize and accept deadlines, and must produce results on time as specified in the contract. Success in this regard does much to ensure success in obtaining new and larger contracts in the future and to improve the image of the university.

And they must sometimes be prepared to recognize the need for "secrecy" and the temporary withholding of publication. "Any restraint on freedom to publish is considered anathema by many academics in our experience, the danger in this regard are much exaggerated," Dr. Matthews said.

Another possibility is the joint involvement of university and industry in large research projects, along the general lines of the new "teaching companies" in Britain. "The consortium arrangement" is a third approach. Dr. Matthews described the University of Waterloo's consortium with two local companies to carry out a research and development contract for the Canadian government in the solar-energy field.

The university has hired a team of full-time researchers (recent master's and doctoral graduates) to work under the supervision of academics active in solar energy research. The initial stages are taking place mainly in the university, but the industrial involvement will increase as work proceeds and some of the young researchers may move with the project into the companies concerned.

Dr. Matthews pointed out that much technology arising out of university research is in such a "raw state" that no industrial company will accept it.

## Worldwide worry over new restrictions on academic mobility

Academic mobility is central to the interests and purpose of the Association of Commonwealth Universities, and it normally crops up as a topic of discussion at the quinquennial congresses.

This year's session on "mobility of students" and "staff" later nationally showed no diminution in "delegation" enthusiasm, but concern about new restrictions on academic mobility was a new theme.

However, statistics presented by two speakers, Dr. Frank Thielothwaite, vice-chancellor of the University of East Anglia, and Dr. James Perkins, president of the International Development Council for Educational Development, demonstrated that movement of students and academics between countries is still growing, despite the obstacles.

Sir David Berham, vice-chancellor and principal of the University of Melbourne, started the session by reporting the reasons why international academic mobility is necessary for the health and strength of universities. These well-known truths need repeating today, he said.

"The first essential for its achievement is, of course, for universities to be free to seek appoint-

ments to their available academic posts from the best available in the world and for them not to be restricted by employment policies, otherwise reasonable for their local community," Sir David said.

"Satisfaction of that requirement, however, may not be enough. Other devices and procedures must be used to ensure that the work proper to a university can be in touch with the best work anywhere in the world. Interchange schemes, study leave schemes and the like, to supplement and enrich other means of communication are required."

Where restrictions on mobility are irretrievable, Sir David said, universities should observe an order of priorities: "First, for creative and productive academic leaders by way of travel and visits; second, for postgraduate students; and, third, for undergraduate students."

Dr. Thielothwaite presented his colleagues with an up-to-date version of some figures of student and staff mobility that Sir Robert Macdonald, then vice-chancellor of Birmingham University, had offered the 1962 Commonwealth Universities' Congress.

In the five Commonwealth coun-

tries selected for the student mobility statistics—Australia, Canada, India, New Zealand and Britain—the number of overseas students rose by between 96 per cent (Australia) and 343 per cent (Canada) over the period 1961-62 to 1974-75.

Since these countries also experienced a rapid growth in the number of home students, the proportion of overseas students did not increase in all of them, though in Canada it went up from 5.5 to 9.5 per cent.

In India, Canada and New Zealand the proportion of Commonwealth students in the total overseas students increased somewhat between 1961-62 and 1974-75.

But in Britain it dropped substantially, from 60 to 30 per cent. The most noticeable fall was in the number of Indian students in Britain, from 1,660 in 1961-62 to 987 in 1974-75.

Indies fell, too, from 387 to 189. On the other hand, the number of students coming to Britain from Malaysia and Singapore rose even more dramatically, from 434 in 1961-62 to 2,860 in 1974-75.

Dr. Thielothwaite's figures also showed a big increase in the recruit-

ment of staff who started their academic life in another country. The number of academics in well-known universities in Canada, Australia and New Zealand who had obtained their first degrees in another Commonwealth country, rose remarkably, both in percentage and absolute terms, between 1962 and 1976.

At McMaster University 537 out of a total academic staff of 977 in 1976 were not graduates of Canadian universities. Britain provided 20 per cent of the staff and the United States most of the rest.

At the universities of Sydney and Melbourne 35 per cent of academics have first degrees from abroad, and the proportion from the other Commonwealth countries (Britain, Canada, New Zealand and India) rose from 23 per cent over the period 1962-76.

Indian universities have fewer academics with first degrees from abroad, for example 10 per cent at Aligarh and 22 per cent at Bombay. On the other hand Indian qualifications have become much more acceptable overseas, the number of academics at nine well-known universities in Britain, Canada, New Zealand and Australia rose from seven in 1962 to 89 in 1976.

Dr. Perkins, former president of

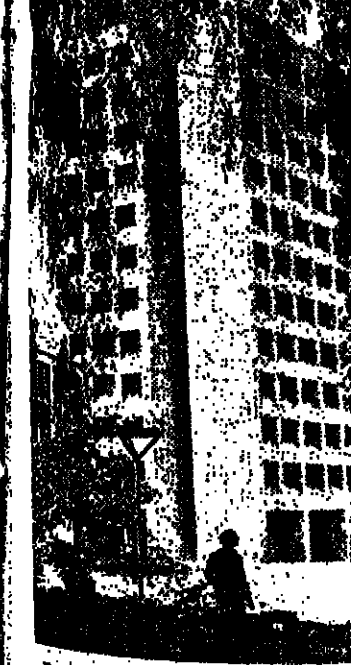
Cornell University and the only non-Commonwealth speaker to address the congress, described the wide movement of students and academics.

First came the "free market in laissez-faire stage." It was gradually replaced by higher education expanded after the Second World War by an increasing number of requirements and conditions for study overseas: the "restricted market."

"We have not fully entered the restricted market era because the guidelines are imperfect, the purposes uncertain, the restrictions are full of loopholes, and institutional differences vary so considerably as to allow great freedom of choice," he said.

Yet, he went on, we are already moving into a third stage: "a restricted market, rules, conditions and difficulties multiply, the planned market emerges as the natural way to relieve the individual of having to deal himself with the complexities of stage two."

Dr. Perkins estimated that over 700,000 students are currently studying in countries other than their own—200,000 of them from OPEC nations.



Part of the University of British Columbia

## The three roles of the university, by Sir Charles

The official theme of the congress—Reconciling National, International and Local Roles of Universities with the Essential Character of a University—was discussed directly by only one speaker. Sir Charles Wilson in his keynote speech opening the conference.

Sir Charles, former principal of the University of Glasgow and vice-chancellor of Leicester University, identified three principal university roles—the two "first order" roles of teaching and research, and the "second order" role of the recruitment and certification of a main proportion of those who are to take up the higher employments of a society.

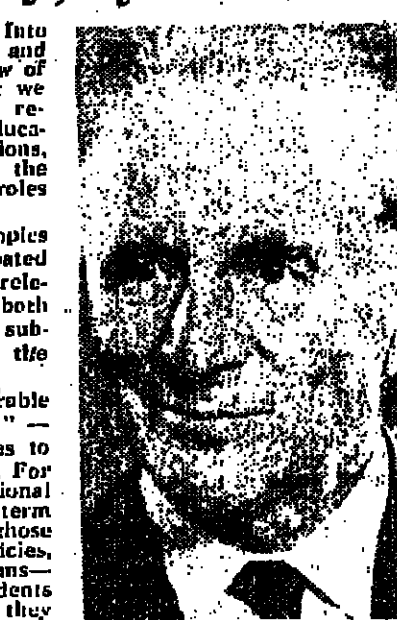
The latter, he said, is a second order role only because it follows from the first two, not because it is of secondary importance. "On the contrary, on any judgment this additional role is of the greatest weight," he said.

The three roles, according to Sir Charles, define "an arena of endless debate," with participation

from all sections of society. "Into the arena the papers of this and other conferences, our own flow of reports and literature on what we do, streams of official inquiry reports, the literature of the educational press and of the professions, etc. The outcome of it all is the changing adaptation of our roles and of their settings."

Sir Charles picked out two topics which are currently being debated very actively in the arena: "relevance" and "access" (both featured prominently in the subsequent programme of the congress).

He coined one memorable phrase—the "new relevantists"—and challenged the relevantists to answer some "stiff questions." For example, who tells us what national needs are? Are these short term or long term needs? And those needs: social, economic, political, welfare, policies, manpower plans—how reliable are they? Will students still be free to choose what they will study? He left the replies to others.



Sir Charles: opened conference



# How a university felt the legacy of violence

Coleraine opened only one year before Ulster's Troubles flared. A Commons committee has discovered the consequences

The New University of Ulster at Coleraine was the last of the rash of new universities spawned by expectations of rising student numbers early in the 1960s.

Almost as it opened its doors in 1968 questions were beginning to be asked about the assumptions on which the forecasts had been based. A year later Northern Ireland had exploded in sectarian violence and an extra factor was thrown into the equation.

Ten years later, following nearly as many years of sustained sectarian violence, the answers were disclosed to the House of Commons public accounts committee (THES, August 25).

Student numbers in October last year at Coleraine totalled 1,770. This was more than 400 short of the number the university had been expected to take in 1972/73. It was only half the number the university planned to take for 1977/78, before plans were shelved in 1975, shortly before tenders were ready to go out.

Officials ascribe the continuing shortfall to three factors. The first they say applies to all universities—that the numbers of 18-year-olds wishing to go to university had not come on rising as envisaged by Robbins, and its Northern Ireland equivalent, Lockwood. The other two are related to what Mr. Arthur Brooke, the Permanent Secretary at Northern Ireland's Department of Education, delicately called Ulster's "disturbed times".

The New University might have been built on the existing Magee College site in staunchly Catholic Londonderry. Instead a green field site in mainly Protestant Coleraine was chosen. It was heavily dependent on applications from students from the rest of the United Kingdom, and the effect of the troubles was predictable.

Coleraine's attractions were eventually outweighed by anxieties about the level of terrorism which has scarred the life of the province ever since.

Applications from students outside Northern Ireland began to dwindle. It was apparent by October 1972 that no-one felt certain that the trend would continue. In 1972/73 student numbers fell short of the 2,200 target by 500. Admissions however rose very slightly during the period 1971/72 to 1972/73.

Although the 1971-72 shortfall was only marginal, it had risen to 23 per cent by 1972/73. A recurrent grant for the 1968/69 to 1972/73 quinquennium had been based on a forecast of 2,200 students attending in the final year. Although actual numbers fell short by 528 the University Grants Committee did not make any adjustments to the grant.

They were told of the shortfall in November, 1972 but by then staff had been appointed and expenditure incurred. The UGC agreed it was "too late to alter the grant". For the next five-year period the grant was originally geared to an expected student growth from 1,872 to 3,465 by 1977/78. Even by October, 1974 when there should have been 2,450 students there was a considerable surplus of facilities. Student numbers in 1977/78 reached only 1,770.

The UGC began to trim Coleraine's resources. And, in 1974/75 the supplement to the grant designed to take account of inflation was halved. It was stopped completely the following year. Since then grants have been paid on an annual basis, taking account of actual student numbers rather than forecasts.

Northern Ireland civil servants also reacted to the shortfall. Phase three of the university's expansion programme, to 3,400 students by 1978, was shelved in February 1975. But the PAC thought officials

should have acted earlier, opening up the possibility of negotiating a reduction in the £144,772 provisional fees for preparing the abortive tender documents for the project.

The third factor was underlined by the university's vice-chancellor, Dr. W. H. Cockerill, earlier this year. More Northern Ireland school leavers were leaving for university education outside the province. By 1976 less than 60 per cent of Ulster sixth-formers wanted to go on to university stayed to study in Northern Ireland.

Lockwood had believed that students leaving to go to university would be offset by similar numbers wanting to come to Ulster. But according to Dr Cockerill latest figures suggest a net loss of about 400 a year. Ulster's young people were beginning to see a university course on the mainland as an escape route from the violence—one which has become permanent for many.

Dry presentation of targets and actual student numbers obviously gives only a partial glimpse of this out when he appeared before the public accounts committee. He felt that behind the MPs' investigation was the question whether Coleraine had been, in bald terms, a success or a failure. "It is my opinion that the New University has undoubtedly been a success", he told them.

Very few higher education institutions throughout the United Kingdom had failed to reach the numbers forecast for them in 1960. Some had been severely pruned, if not actually closed down. This had not happened to Coleraine and the effect of the optimistic forecasts had been to give Northern Ireland the flexibility it needed, with three higher education institutions instead of two.

Mr. Brooke told the MPs Coleraine provided an educational centre in the north west, had set and maintained high academic standards, and was no more costly to run than other universities.

Other institutions in Northern Ireland have escaped being caught so drastically in the trap set by playing the numbers game. Queen's University, Belfast, was well established before the violence began to act as a deterrent. Anyway it was never as heavily dependent on non-Ulster students as Coleraine.

Queen's University administrators agree that the proportion of candidates from outside the province is smaller now than in the late 1960s. "It has dropped to a more trickle", said Mr. Wiseman, who said the intake had never been a substantial one. It had not exceeded about 15 per cent and had now stabilised at about 5 per cent after bottoming out in 1973.

"We are 90 per cent-plus a local university," Mr. Wiseman said. "Our intake is vitally a local one now-days but we do not have a numbers problem." Queen's was not hit so badly because under the plan for up in the mid-1960s, it was due to expand anyway. Officials felt it was big enough—and that any more expansion should take place at Coleraine.

Ulster College—Northern Ireland's polytechnic at Jordanstown—was set up at the height of the troubles, with its first intake in September, 1973.

A large proportion of its 7,000 students are part-time, or local, or from outside the province.

A spokesman at Coleraine disclosed that applications for 1978/79 from outside Ulster were very much on a par with last year's. At this fluid time, with the UCCA clearing scheme still to operate, he could not forecast the number of students starting up in a very satisfactory way. "We are quite pleased with the way we have competed. I do not think you can show me another higher education institution in the world which has had such an unkind climate in which to attempt to make its way in its first 10 years."

The spokesman stressed that the absence of the dynamic growth of student numbers forecast 20 years ago was the root of the admissions issue.

David Jobbins

# What can psychology bring to photography?

What do artists, photographers and psychologists have in common? Dr Alan Costall of Southampton University and Mr Terry Wright of West Surrey College of Art and Design are planning to explore the answer in a research project which is being launched this summer.

The project is founded on the conviction that photographers and psychologists have much to teach each other. The special characteristics of the photograph have been examined by artists and photographers for more than 15 years. The investigations of psychologists into the perception of photographs are more recent and perhaps less well known.

Dr Costall, from Southampton's department of psychology, and Mr Wright from West Surrey's department of art and design, are currently touring studies and techniques to publicise the marriage of the two disciplines. They are talking to students in photography, psychology and even architecture departments.

Already there are a large number of participants from colleges and schools of art, Trent, Farnham, Winchester, Newport, the London College of Printing and Sheffield. Members of the school of architecture at the North East London Polytechnic are also taking part.

The end product of the talking will be an exhibition which will be shown first at the Photographic Gallery at Southampton University which is helping to finance the project.

The aim of the exhibition will be to make comments about the nature of photography. It will include both visual and written material from the colleges which have been involved in the project. One section will look at the convincing nature of the photograph compared with other forms of representation. Another will look at the apparently direct relationship between the image and the scene as recorded. There will be demonstrations of optical distortions arising, for example, from extreme foreshortening and

wide angles of view and different kinds of ambiguity in photography. After it has appeared in Southampton, the exhibition will tour the country. In the academic year 1978-79 it will be up to the exhibition to search for the answers to the questions which the participating colleges and schools are already asking in their journals of photography and visual arts.

They hope that the project will have lasting results in shaping photography courses. At the moment, the project is being run by two photographers who are already looking at the relationship between psychology and photography.

Mr Wright and Dr Costall say that their project arises from developments in art and photography. Photographers have become concerned with the limitations of photography and some artists have produced works which aim to transcend these limitations and to communicate the distinctive characteristics of the photograph. They have tried to show the influence of captioning titles and changed meanings in different focus and exposure.

In psychology, too, research in the perception of the photograph is beginning to produce changes in approach and criticism. The analogy between the eye and the camera. The researchers point out that classical theories of perception hold that the photograph reproduced an image in a straightforward way and presented no particular problems of explanation.

The new view of perception challenges the classical theories. "We do not normally perceive the world from a fixed and restricted point, nor is perception the passive registration of momentary and static 'images'."

At the moment, they say, photography suffers from a lack of theoretical tests. They hope that the project will do something to remedy this.

Judith Judd

# The selling of Oakes—down the river

The compromise reached six months ago on polytechnic and college finance is falling apart

It is hard to imagine a less likely victim of pre-election political jitters than the Oakes Report on polytechnic and college finance. Since its publication six months ago it has been amply praised—albeit by faint damns. None of the main protagonists—local government, the Conservative Party, the teaching unions—could pretend to be outraged by a report they had cooked up together in secret. But they all had minor gripes. It appeared to possess all the virtues of an imperfect compromise.

But that compromise, so painstakingly cobbled up in nearly a year of meetings, now appears to have fallen ignominiously apart. Last month the local authority associations, which had solemnly and slowly agreed to accept most of the report, abruptly changed their minds again. The Committee of Directors of Polytechnics, after first expressing reservations about the main recommendations, now wants the report put on ice pending a Robbins-style inquiry into higher education.

What has gone wrong? In at least one sense the seeds of disaster were sown when the committee was first set up. In an attempt to reach quick agreement, the group's members were drawn from the three warring factions—local government, the CDP and NATFHE. But although members were appointed to the committee because they were nominally there in individual capacities, as a result, committee members had to "sell" their organizations once the report was agreed.

It was not an easy job. The two

polytechnic directors on the committee, Arthur Siddiquy and Dr Raymond Rickard, were by no means popular in the CDP when the Oakes package was unwrapped. Both had inserted what they believed were adequate safeguards to ensure that polytechnics could not be taken over by a national body which would be government purveyors. The local authorities, in turn, were not happy with the proposed direct control by the proposed national body. The other was a statement of the report's preamble that the merits of taking polytechnics away from local government altogether had never been discussed.

In the event, neither pally nor truth that what the CDP wanted was what the Oakes report was proposed. The Oakes committee had covered itself against such an event by including Conservative local government leaders among its members.

What the committee had not done was to win over Conservative parliamentary leaders. Dr Keith Hampson, MP for Ripon and a spokesman on higher education, had distinguished himself early in the report, promising to give before a publication that a Conservative government would not implement it. When it became clear that the ACC suddenly decided that they might not accept the report after all. Conservative central office had evidently decided that since Labour was not working, it would not concede even a minor success to the financial arrangements for polytechnics and colleges.

Thus, the Oakes package, which had been hailed as a potential catalyst for the general election, has now become a potential catalyst for the Conservative Party's defeat. Whether an election is held or not, the Oakes package is likely to be a major loser. If Labour wins, and forces Oakes upon the local authority associations, they will lose credibility. If the Conservatives win, they are likely to be sympathetic to the CDP's plea for freedom from the town hall. Meanwhile, the Oakes package roundabout may never end.

Peter Davis

# The tragic enigma of Tolstoy

August 28, 1978, was the 150th anniversary of the birth of Count Lev Nikolayevich Tolstoy, who is regarded by the vast majority of readers and critics as Russia's greatest novelist, and whose influence throughout the world as a moralist and preacher is still immense.

Tolstoy did not care for ceremonial occasions. He did his best to frustrate the public celebrations planned for his eightieth birthday in 1908 (despite which he received, in one week alone, some 2,000 telegrams and many hundreds of letters from all over the world, and he would not have welcomed this modest anniversary tribute today. Nor would he have been pleased by the numerous critical studies devoted to him at this time to his great novels, for he believed that most critics were misled by the apparent simplicity and clarity of his writing and the vast amount of information available about his private life. Tolstoy remains an elusive artist and an enigmatic human being whose personality has never ceased to arouse bitter controversy and disagreement.

For most lovers of literature Tolstoy means above all *War and Peace* and *Anna Karenina*, and any tribute to him must begin with them. *War and Peace*, Tolstoy's greatest work, is probably unique among novels in its range and scope, a marvellous blend of historical fact and fiction with imaginative vision, an immense inventory of human nature. It drew directly on his superabundant vitality, his arduous upbringing, his rich acquaintance with war, his deep interest in his country's history, his microscopic observation of his close family and friends, his newly found domestic happiness and, not least, his restless and unending search for the meaning and purpose of life. It was the product of a powerful, generous nature and a probing introspective mind.

Tolstoy possessed exceptional powers of observation, the ability to look inside a person and analyse the complex motives for human behaviour, but most of all, the capacity to breathe life into his characters in a way which nobody has yet succeeded in fully understanding or imitating. Characterization was his true art as a novelist, and it is this which makes his novels so compelling and so satisfying in the more conventional sense of the term. Architecturally speaking, its merits are more immediately apparent. Its heroine is undoubtedly Tolstoy's greatest portrait of a mature, wholly adult, three-dimensional woman; while in Levin he created a religious seeker who carries Pierre's search a stage further along the road towards the destination he was soon to reach himself in his autobiographical *Confession*.

Somewhat surprisingly, more criticism has been levelled against *Anna Karenina* than against *War and Peace*; for example its excessive obvious symbolism, some faults of structure and composition, certain tedious and superfluous interludes, and, most serious of all, the change of intentionlessness on Tolstoy's part in allegedly killing off Anna and taking Levin under his protection—of deliberately manipulating the plausible development of his characters in the interests of his own overriding moral and didactic purposes.

While a case can be made out for at least some of these criticisms, they pale into insignificance beside the total achievement of Tolstoy's novel in which he triumphantly demonstrated his immense range of knowledge of human nature, his breadth of sympathy and understanding and an anger tempered by charity. His extraordinary powers of observation, his vivid and

monsters", lacking in orderliness and finesse.

Happily this view has been much modified in recent years as more recognition has been paid to what Tolstoy called in the context of *Anna Karenina* "the labyrinth of connections" the carefully contrived parallelisms and foreshadowings, the echoes and foreshadowings, the art which conceals art, which a closer analysis of the text continues to reveal.

*War and Peace* marks a new stage in the history of the Western European novel because of its concern with historical, social, ethical and religious problems on a scale never previously attempted. Its author possessed a unique combination of intelligence, imagination and seriousness of purpose; profoundity of thought and profundity of emotion. His novel engages the mind; it brings into play the animal and rational sides of the reader; and its content is surely richer, fuller and more varied than that of any other novel before it.

If *War and Peace* is for most people the acme of Tolstoy's fiction, *Anna Karenina* is often considered a more satisfying novel in the more conventional sense of the term. Architecturally speaking, its merits are more immediately apparent. Its heroine is undoubtedly Tolstoy's greatest portrait of a mature, wholly adult, three-dimensional woman; while in Levin he created a religious seeker who carries Pierre's search a stage further along the road towards the destination he was soon to reach himself in his autobiographical *Confession*.

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While a case can be made out for at least some of these criticisms, they pale into insignificance beside the total achievement of Tolstoy's novel in which he triumphantly demonstrated his immense range of knowledge of human nature, his breadth of sympathy and understanding and an anger tempered by charity. His extraordinary powers of observation, his vivid and

laid depiction of contemporary life with hardly a trace of sordidness or naturalism, allied to an earnestness of purpose and a relentless preoccupation with the fundamental issues of life in society, make *Anna Karenina* one of the truly great works of Russian, and indeed of world literature.

Compared with the major novels, Tolstoy's short stories, though very numerous, are less widely known. The earlier ones are sometimes regarded as mere trials of the pen, without passing moral problems, but combining as it does a basically interesting theme, exotic colouring, stylistic variety and a wealth of absorbing detail with the sympathetic portrayal of a wide range of characters, posing moral judgments without passing moral judgments.

Most of the later stories have a distinctly didactic and moralistic flavour, but the best of them are, in my view, superior to much of what was written before *War and Peace*. The *Death of Ivan Ilich* is a harrowing account of the agonising end of an ordinary man who has achieved worldly success as a judge, but when faced with the painful inevitability of death, reviews his past and comes to realize that what he had valued then is of no significance now, and that all he can do is, by dying, to rid his family of an unwanted encumbrance. In reaching this conclusion he loses his fear of death. In *Master and Man* a brash, self-made merchant performs an eleven-hour act of unselfishness and, on the point of death, is made aware of the vanity of riches and worldly success.

The long story *Hadji Murat* on the theme of the ill-fated and death of the leader of the military tribesmen who fought to resist the Russian conquest of the Caucasus in the 1850s is a crystal-clear, exciting and supremely well-narrated tale which belongs unmistakably to the category of universal art which Tolstoy prized so highly in his treatise *What is Art?*

Nearly all Tolstoy's later fiction took the form of long or short stories, but he did write one major novel after his so-called conversion, and devoted it to the theme of guilt and expiation. *Resurrection* inevitably suffers from the need he felt to write an extended *What I Believe* covering all the major social problems of the day, an encyclopaedic profession of *de foi* which, while masquerading as a

novel, would do the work of a tract, but despite that it contains some splendid passages and a wealth of realistic detail expressed in direct and forceful language. Tolstoy at the height of his powers would have been proud to have written it.

The range of Tolstoy's literary activities is truly remarkable. If one adds to the three novels and plays also the three major works of fables, folk tales and parables, the religious and philosophical treatises, his *Translation and Harmony of the Gospels* and his *Criticism of Dogmatic Theology*, and his numerous essays and articles on pacifism, non-resistance to evil, capital punishment, social and agrarian problems, land ownership, famine relief, education, the meaning and purpose of art, Shakespeare and the drama, sex, alcoholism and vegetarianism, to mention only the most important, one can only marvel at the prodigious energy and astonishing breadth of interests of this colossus of a man.

Everyone accepts Tolstoy's preeminence as a novelist, but his reputation as a thinker is more than a little tarnished today. For many years it was usual to dismiss his philosophy of history in *War and Peace* as unworthy of serious academic consideration. His magisterial pronouncements on the nature of power, the problem of free will and determinism and the role of great men in history were commonly brushed aside as extremist, intellectually feeble, factually erroneous, repetitive or simply irrelevant.

Isaiah Berlin took up the cudgels on Tolstoy's behalf, and while not overlooking his exaggerations and factual inaccuracies, found many of the charges brought against his intellectual powers grotesquely implausible, and attempted in particular to understand the merits and original insights of his philosophy of history. This reaction has in turn provoked a new reaction which concentrates on logical flaws in Tolstoy's reasoning, misleading analogies and parables and loose generalizations. But assumes, quite wrongly in my opinion, that a greater grasp on Tolstoy's part of the principles of formal logic would have made the thoughts he was expressing more deserving of serious attention.

Bertrand Russell observed that it was the greatest misfortune for a human being that Tolstoy had so little power of reasoning; and nobody would deny that Russell was an infinitely superior logician to Tolstoy. This does not mean, however, that

his views on communism, for example, are far from likely to be more sensible than those of a man who has never studied mathematics or philosophy. To dismiss the strength of Tolstoy as a thinker on the evidence of logical shortcomings and inconsistencies in his philosophy of history is as short-sighted as to discount Russell's formidable intellect because of the many silly things he said towards the end of his life.

One can disagree with Tolstoy when he belittles his own great novels, adopts an iconoclastic attitude towards Shakespeare and Beethoven or preaches sexual continence within marriage without therefore assuming, as has recently been done, that all his thinking is characterized by egocentricity, and has for its aim not truth, but emotional satisfaction; and I would maintain not only that his power of reasoning about moral, ethical and religious questions is of an unusually high order, but also that many of the conclusions he arrived at have significantly affected the lives of countless people in most countries throughout the world.

The standard edition of Tolstoy's works, which runs to 90 volumes, includes 32 volumes of letters and 13 of diaries and notebooks. It might be thought that the evidence of these letters and diaries, together with the memoirs and reminiscences of his wife and children, relatives, friends, disciples and visitors would have been enough to provide a generally acceptable picture of the sort of man he was. And yet this question is the most controversial of all the many controversial questions which surround Tolstoy's life and works.

I have said on more than one occasion that I believe that in the last analysis Tolstoy was a great novelist because he was a great man. This provocative assertion has not gone unchallenged, and recent reviewers of my edition of Tolstoy's letters have taken some hard things to say about it. Robert West, for example, regards him as a man who was inferior to all but a small section of the criminal population, a monster who has earned the contempt of the whole world. Edward Crankshaw, who severely misses him as arrogant, intolerant and very far from admirable in everything except a certain stubborn courage in the face of authority.

Needless to say, a great man is not the same thing as a good man in the conventional sense, and nobody can overlook Tolstoy's youthful sexual promiscuity, his egotism, his dominating and hectoring personality, his irritating and opinionated mannerisms or his iconoclastic attitudes to great men in general (and himself in particular). As a man he had more than the average share of vices. Nevertheless, I have not changed my opinion, and feel tempted to reaffirm it and to try to justify it.

Tolstoy, for all his youthful extravagances, was essentially an austere man, immensely industrious, exceptionally versatile, profoundly concerned with important moral and spiritual issues and increasingly depressed by his situation in a wealthy and over-privileged family which had little sympathy for his eccentric views and unconventional behaviour. Although he disliked travelling abroad, he was the least parochial of men spiritually and mentally, a cosmopolitan in the broadest and most laudable sense of the word.

His library at Yasnaya Polyana provides striking evidence of his immensely wide-ranging mind, his ability to read French, English and German as easily as Russian, or to learn Czech and Hebrew when confronted by urgent problems of scriptural interpretation which allowed him no peace; evidence of his interest not only in the West but in the East, in Asia, in less than Europe, in history, religion and philosophy; as well as literature, art and music; in the past no less than the present. He believed, rightly in my view, that the intellect is only one attribute of a human being, and that the evaluation of mental activity over physical, of sedentary work in the study

continued on page 11



Two views of campus life abroad, with cartoon interpretations by Kipper Williams

## Drawbacks of university life—French style

After a week of oral examining in which at least two of every three candidates buggeringly expressed their admiration for the British way of life, and in particular their wistful hankering after British student life, I began to wonder if we in the United Kingdom really appreciate how lucky we are.

Financial cutbacks and unfilled posts notwithstanding, a year of teaching in a French university makes one realize that British universities have a solid human core which money problems can do little to alter.

On the surface, French universities face similar problems to those at home. Finance is a continual millstone, and when a member of staff leaves it is not certain he will be replaced. The SNESup, more politically orientated and less gentlemanly than the AUE, laments the lack of promotion prospects which results from the massive expansion of the 1960s. Final year undergraduates in arts subjects, on courses traditionally leading to secondary school teaching, are increasingly having to enter further training in order to find employment in other fields.

But there the similarity ends. The Université de Bretagne Occidentale with its 7,000 students is very small, by French standards, and much less impersonal than other French universities I have known, but even it totally lacks the communal feeling which is part and parcel of any United Kingdom

university.

For my colleagues in the arts faculty, the university is no more than the building where they teach for a few hours each week. It is rare indeed to find a lecturer in his office. Generally speaking he arrives in the classroom complete with coat and briefcase, straight from his car to which he returns directly afterwards. Timetables are usually arranged so that inconvenient to staff is minimal. It is normal practice for a lecturer to group all his classes so that he need only come to the university twice a week. Three of my colleagues live in Paris, over 350 miles away, and find only a couple of nights a week in Brest.

Such a system clearly makes it well nigh impossible for students freely to consult their teachers on anything they have, not to mention the lack of communication between staff. It also creates time-tables which are pedagogically undesirable, like the first-year class in one foreign language which has all its weekly hours in that subject crammed into one day in the week.

There is nothing to keep either staff or students at the university between classes, no coffee-bar, no common-room, and no SCR facilities. (That essential piece of departmental equipment, the ubiquitous headway in France). For staff and students alike, the only off-campus amenity is from the dispensing machines tucked away in cramped, chairless ground-floor

rooms. The problem is aggravated by the university's situation in a brand-new suburb of multi-story flats, with few of the cafés of a traditional French town centre.

The student residences, too, are more than blocks of rooms, with none of the built-in social life that one finds in Britain. All but 15 per cent of the students belong to Brest or the surrounding department of Finistère, but they adhere as firmly as their elders to the French concept of "le weekend". From Friday to Monday only the foreign students remain. Even on weekdays the campus is deserted after 6 pm, apart from the large lecture theatre which houses the only student-organized activity, the popular film-clubs which operate three nights a week.

Students lament the lack of community life and speak longingly of the idea of a students' union that they have heard of in higher education establishments in Britain. The very attitude towards university is no different that it is hard to imagine the possibility.

As university entrance for most subjects is automatic for anyone who has his baccalauréat, large numbers of students arrive without any clear notion of why they are there. They disappear with alarming rapidity to the streets of Brest, 40 per cent of first-class arts students in 1976-77 drifted away without even sitting their first exams. One third of the foreign first class to learn is that an ever-growing number of empty places in the classroom does not necessarily mean that students

are boycotting his particular class. Many of those who persevere into second and third year, and the majority of those continuing beyond the licence, have to take part-time jobs, usually as *surveillants* or as unqualified teachers, in order to pay their way. This no doubt partly explains why the university's role declines to that of a provider of a certain number of necessary classes. These students, with the energy and maturity to organize spare-time activities tend in France to be those who have the initiative to find a job in order to be independent of their parents.

Admittedly, for examination purposes, French undergraduates depend on retaining the good marks of individual teachers, and the final year of the licence, where there is no double marking of papers and no external examination.

For me, working for a year and a half in a French university has provided a unique opportunity for reflection. I return to teaching in a British university with a group of students who are not afraid to speak their mind or exchanging notes with colleagues over a cup of coffee. They are active in their own right, but they are not the same as the students I have known in France. They are not the same as the students I have known in France. They are not the same as the students I have known in France.

The students themselves are conditioned to accept the system. They are not the same as the students I have known in France. They are not the same as the students I have known in France. They are not the same as the students I have known in France.

Kathleen McKilligan  
The author has been teaching English at the Université de Bretagne Occidentale at Brest.

## Look west, young man, and note how well off you are

If the president of the NUS and his cohorts are considering territorial expansion they could do a lot worse than send an advance party to the United States. The plight of American students will bring tears to the eyes of even the most hardened NUS warrior.

Gone are the days of strident and articulate American student activism. The turbulent days of the March on the Pentagon, of Kent State and of Chicago (when students were at least vocal, albeit for causes other than their own) have been replaced by a state of morose and hopelessness. Sporadic do-lensence has given way to a morose and hopelessness. Sporadic do-lensence has given way to a morose and hopelessness. Sporadic do-lensence has given way to a morose and hopelessness.

In most States (the notable exceptions being California and, to a lesser extent, New York) students are presented with a host of ugly realities. Of all the present concerns by far and away the most important is the increasing power of the buck in education. Should an American teenager, for example, aspire to dentistry, his total eight-year educational bill will be in the region of \$80,000.

Only the wealthy, the highly privileged, the viciously determined can ever hope to receive the education offered by the private universities with most prestige. For the majority the financial burdens of education will haunt the first few years of their working life as they encounter opposition. Last year President Carter considered entirely stopping student loans, and banks and lending institutions are voicing concerns about the 12 per cent default rate.

It is impossible to exaggerate the difference between the problems encountered by British students and their American counterparts. Students are expected to pay the market price for accommodation, food and books. They are entitled to few protection from the profit-seekers. No longer can it be argued that the parents' "half effort" to send their

children to the private universities where, in general, the best education can be found. With the tuition and price rises of the past few years America is in danger of losing her foremost institutions become the sole preserve of the ultra-wealthy.

There are other sources for contention. Students generally have to contend with enormous class sizes. (In State and of Chicago (when students were at least vocal, albeit for causes other than their own) have been replaced by a state of morose and hopelessness. Sporadic do-lensence has given way to a morose and hopelessness. Sporadic do-lensence has given way to a morose and hopelessness.)

The confusing factor in American student politics is that while on the national level they lack any cohesive unity, students participate fully in the day to day life of their university. Participatory democracy is not limited to the theory of a political science; it is actively and vigorously practised. Most colleges possess various undergraduate assemblies where many local issues are aired. At the end of each semester students are asked to evaluate faculty on matters ranging from clarity of lectures to fairness of grading.

Decisions about faculty tenure are almost always made with invited student participation. Teachers designing new courses will earnestly seek students' opinions on the subject or handouts which describe academic standards. Within individual colleges and universities American students enjoy an unparalleled participatory involvement in the broader issues of American higher education. They seem to be deflected by flickering trivialities from the major dilemmas of the day.

Three organizations purport to represent American students. The oldest is the National Student Association whose credibility suffered severe damage when it was revealed that its coffers had long been generously filled by the CIA. Another body with an equally impressive name, and an equally soft lobby, is the National Student

Union. Founded after Interstate war within the National Student Association. The two bodies, due mainly to impending bankruptcy, plan to reunite by the middle of the year.

Both organizations claim a representative of American students and yet their effective constituencies remain at the large state universities. The rest of their membership consists of occasional members at other institutions. Most campuses do not possess official student bodies in the sense of a fully staffed office.

The third organization, COPUS (The Coalition of Independent College and University Students), is essentially a rear-guard action by middle-class students attending private universities. It was established three years ago and has its offices in Washington and a six-figure annual budget. Consciously styled on the lobbying activities of major corporations it seeks change through powers of persuasion and simultaneously questions any other approach. With the support of several university presidents and with the encouragement of men like Kingman Brewster, COPUS hopes to enlarge federal aid to students.

Despite the existence of these bodies most students remain unaware of their presence. All three are unable to command political recognition, media attention or public acknowledgement.

The reasons for this are difficult to fathom. No doubt geographical circumstance is an important deterrent to consolidation and centralisation. In addition the students who seek entrance to graduate professional education (and the most determined of these) have no option but to submit their all to the demands of continual assessment. Many other equally determined students spend a large part of their week working in order to finance their education.

Transcending these reasons is a more general inability to perceive the destructive and debilitating forces at play within the higher education system. The inescapable, irremovable fact is that nationally, American students remain in the political nursery.

Michael Moritz

The author has been studying in a private eastern university in America.

## The tragic enigma of Tolstoy

continued from page 9

annual labour in the fields or the garden, is injurious to the health of a balanced and integrated personality.

Just as man was for Tolstoy much more than a man, so was respect and tolerance for him all living beings, animals, birds, trees and plants, without which human life would be sadly impoverished. Tolstoy's love of the land and his attitude to animals in his later years all testify to the importance he attached to the sanctity of life in all its manifestations. Life for Tolstoy was a serious business, and the most urgent answer to its meaning and purpose in a religious which could prescribe rules of behaviour to make him a better man, without requiring him to engage in practices or subscribe to a faith which his reason found repugnant.

Of course he constantly fell short of the ideal he set himself on the basis of his own idiosyncratic interpretation of the Gospels, but he refused to believe that he was a hypocrite (or even, as has been said, a hypocrite who worried about his hypocrisy). Nor did I accept that he was a largely unavailing struggle to harmonize his behaviour with his principles. Tolstoy set himself impossibly high standards because he believed that he was bound to fall below them, and that the higher he tried to go, the further he fell.

He recognized that there would always be a big gap between principles and practice, but he stood out from the mass of mankind by choosing principles to follow which could not be reconciled to any degree with the way of life to which he had always been accustomed. He gave up hunting, shooting, tobacco and alcohol. He became a strict vegetarian. He renounced the property and the copyright of his work. It was not his fault that he was not a saint, but it was his fault that he was not a hypocrite. He was a man who was not a hypocrite.

The enigma of Tolstoy is never far from being solved. Perhaps the answer is: "At once intensely proud and filled with self-hatred, omniscient and doubting everything, cold and violently passionate, contemptuous and self-abasing, tormented and delighted, surrounded by an adoring family, by devoted followers, by the admiration of the entire civilized world, and yet almost wholly isolated, he is the tragic figure of the great writers, a desperate old man, beyond human wandering self-blinded at Tolstoy."

Personally, I like to think of him, not as somebody who offended conventional standards of morality and behaviour, but as a man who never gave up trying and struggling to achieve his ideal. He was a man who was not a hypocrite. He was a man who was not a hypocrite.

The impact of the new Model E intakes on the scale apparently anticipated and hoped for by politicians and universities alike will be penetrating. There is a world of difference between entering

L. Jonathan Cohen replies to the critics (THES, August 4) of his article about Popper and Bacon (THES, July 14)

## What scientists cannot learn from Popper

The popularity of Sir Karl Popper's ideas is clearly demonstrated by the ardour with which their numerous adherents defend them. But popularity does not establish validity, and the technological value of Popper's science has not been vindicated.

The crux of the matter is still the same. According to strict Popperian principles inductive reasoning has no place in science: there is no rational way to assess the extent of positive support that experimental evidence has to a hypothesis. But against this it has to be insisted that science affords no rational basis for technology unless scientists can supply evidentially warranted judgments about the reliability of their criterion. Popper's own (1959) version implies a relatively high level of reliability for the plane, say, or medicine which is made or used in accordance with the boldest conjectures that have survived available tests. But this would endorse a quite unacceptable rashness in engineers and physicians.

Scientists are very often free, at any particular date, to make conjectures about the outcome of conditions—combinations of materials, forces, etc.—that are very far beyond the limits of our capacity, at that date, to test in a laboratory. Technologists are nevertheless wise to keep the range of the theories that they actually use, or rely on, fairly close to the variety of relevant conditions that are very far beyond the limits of our capacity, at that date, to test in a laboratory.

The original (1934) German edition of Popper's *Logik der Forschung* is impaled on the first horn of this dilemma. It is a purely classical statement of a purely classical ideal. Among competing hypotheses, which have all survived whatever tests can be made of them at the time, scientists are said to choose always the boldest—i.e. that hypothesis which has the greatest risk of being falsified. But neither this nor anything else is allowed to be any kind of reason for believing that such a hypothesis is true or even that it has at least some degree of reliability.

Some of Popper's supporters, like David Miller, still seem to be content with this classical doctrine. Their advice to technologists is to avoid proposals and theories which have not withstood the severest tests available. That advice, so far as it goes, is scarcely objectionable. But it is wholly negative. Without deviating into inductivism, it cannot provide any rational encouragement to adopt those proposals and theories that have withstood appropriate tests, and it is this positive kind of encouragement that technology normally expects and derives from science.

## Model E students will radically change the system

Peter Brunson assesses the likely impact of the most favoured of the options outlined in the Higher Education into the 1990s discussion paper

Mass higher education is on its way. The alarms are sounding in the citadels of excellence. Defensive positions have been adopted. Ralf Dahrendorf (THES, June 2) urges for separate research institutes; Martin Trow (Minterva, autumn 1977) for separate undergraduate institutions for the academic classes and masses, with polytechnics on the British model well suited to the latter.

British mass higher education is, however, likely to appear in a unique form and this form—dependent on the current in the system of higher education—will probably transform the binary into bipartite. The extensive application of Model E policies may transform the binary system in a manner decidedly different to what is hoped for. There is a world of difference between entering

Most of Popper's supporters, however, prefer to impale themselves on the other horn of the dilemma. Sensing the untenability of a conception of science that is utterly cut off from providing a rational basis for technology, they seek to construct a criterion of "reliability" (like R. S. Haines) or of "evidential support" (like Colin Ferguson) out of what Popper has said about how pure scientists choose between one hypothesis and another. And while this is scarcely consistent with Popper's original anti-inductivist doctrine, it does echo some later remarks of his that are published in one of the appendices to the English translation (1959).

But what exactly is the substance of this criterion? Popper's own (1959) version implies a relatively high level of reliability for the plane, say, or medicine which is made or used in accordance with the boldest conjectures that have survived available tests. But this would endorse a quite unacceptable rashness in engineers and physicians.

Scientists are very often free, at any particular date, to make conjectures about the outcome of conditions—combinations of materials, forces, etc.—that are very far beyond the limits of our capacity, at that date, to test in a laboratory. Technologists are nevertheless wise to keep the range of the theories that they actually use, or rely on, fairly close to the variety of relevant conditions that are very far beyond the limits of our capacity, at that date, to test in a laboratory.

Not surprisingly, therefore, some of Popper's supporters (like Haines) prefer a more defensible, less radical doctrine. When it comes to gauging reliability they regard the relative boldness of a hypothesis as "irrelevant" and hold that only "demonstrated resistance to falsification" is significant. But this is just a crude inductivism, which provides no criterion of choice between unfalsified theories.

So other Popperians (like Ferguson) claim instead that a theory can help us to predict future events only in those areas in which it has already "proved its mettle". And at this point, where theories are limited to "prove their mettle" for particular purposes, the surrender to Baconianism is obviously complete. Though Popper's name has been kept on the banner, the

guiding programme is now Bacon's. In short, genuine Popperians can give no satisfactory account of technology as a rational activity. But why has Popper's philosophy seemed so plausible to so many? One good reason is that, once its untenable anti-inductivism is disregarded, much of the rest is a brilliant restatement of certain fundamental truths about the nature of science. The importance of falsification and falsifiability, the need for more and more comprehensive explanations, the value of theories that turn out to lead us to new knowledge—all these points were long ago stressed by Bacon, Whewell and others. But they needed to be reformulated in contemporary terms.

Why then, it may be asked, should Popper and his followers have also taken up an anti-inductivist stance, which cuts them off from giving a coherent analysis of the relation between science and technology? The root of the trouble emerges at the very beginning of Popper's *Logik der Forschung*, and often reappears in the ideas of Popper's supporters (like David Miller and Roger James). It is an over-reaction to Hume's sceptical arguments about our knowledge of causality.

What Hume showed quite successfully was that, when properly understood, causes do not logically imply their effects, the future is not logically deducible from the past, and ordinary scientific generalizations can never claim logical truth. Something must always happen to survive, therefore, and every general theory is in principle always open to correction or replacement in the light of future experience.

It does not follow, however, that at any particular date we have no rational criteria for grading theories in the light of experimental evidence then available. What do we actually do, when we control the conditions under which a hypothesis is tested, or investigate the explanatory power of a proposed theory?

We use the knowledge that we have of the world—knowledge about relevant factors to control, or relevant uniformities to be explained—in order to gauge how strong a claim to knowledge can be made in the light of observable evidence, on behalf of the new hypothesis. Of course, our existing criteria may need modification; we may have overlooked a hidden variable, perhaps, in some of our experiments. But the fact that these criteria of inductive reasoning



Sir Karl Popper

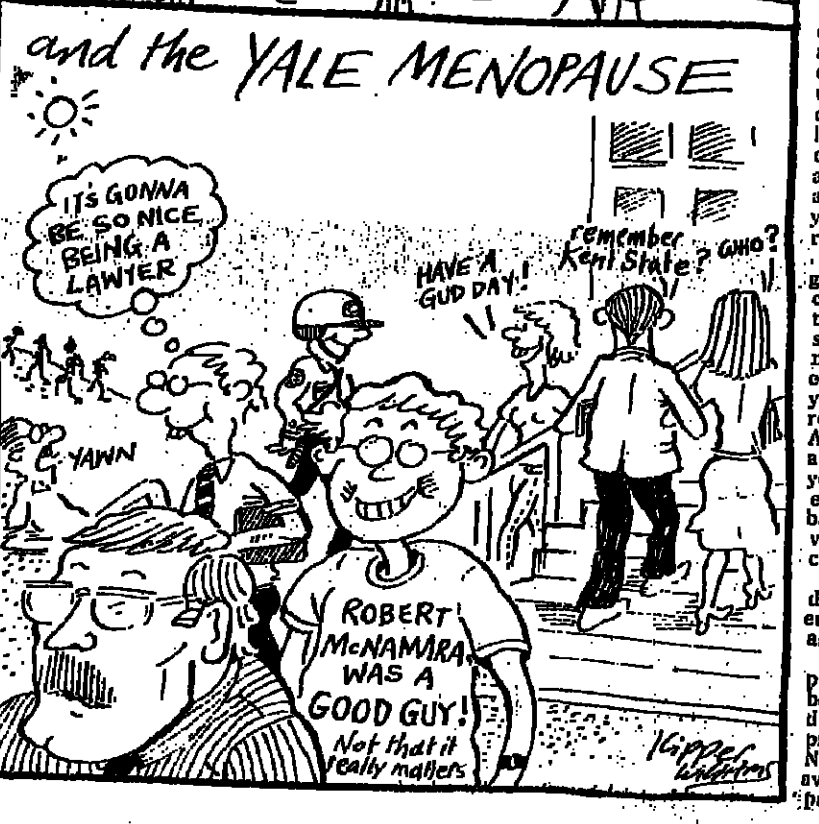
are themselves empirically corrigible does not debar them from rational employment.

Moreover, what both Hume and Popper failed to notice is that, when hypotheses are graded in this Baconian style, the gradings share a common structure with attributions of logical truth. Logical truth, as Hume saw, is in a quite systematic way, to be just a limiting case of inductive reliability. I have worked out the details of this elsewhere—in *The Implications of Induction* (1970) and *The Probable and the Possible* (1977). But the point is not open to serious challenge.

It follows that Hume's arguments need no longer frighten philosophers into thinking that inductive reasoning is necessarily irrational. Conversely a parallel issue. No one supposes now that acids are not neutralisers. They count as numbers because they share the right properties with the paradigms of numberhood—the integers. Analogously inductive gradings should count as rational, at least in so far as they share a common structure with assertions of deductibility.

So there is really no adequate basis for Popperian anti-inductivism, and no philosophical reason for anyone to reject the commonsense view that in trusting our lives to the products of modern technology we are implicitly trusting them to systems of inductive reasoning. The pursuit of scientific truth and of intellectual power over nature should be one and the same objective, as Bacon claimed.

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## BOOKS

## Industrialization in Germany

**The Political Economy of Germany 1815-1914**  
by Martin Kitchen  
Croom Helm, £9.95  
ISBN 0 85664 610 5

Martin Kitchen's new book offers to students of German history a useful summary of recent work on a broad period of industrialization in Germany.

The treatment is basically chronological and there are times when one wishes for a more sustained and thematic treatment of certain issues, and especially for more statistical data to support certain points. The general, however, the explanations of economic growth rehearse sound and familiar arguments. The emancipation of the peasantry is regarded as an important precondition of industrialization, the building of the railways rightly seen as the critical moment, the importance of finance capital and cartelization in a country acutely short of capital resources given due weight. Furthermore the author sees that it is premature to talk of an industrial revolution in Germany in the 1830s.

On all of these points Kitchen covers much the same ground as most general histories of Germany.

Industrialization. However, where his book differs from some, though not all others, and where it is especially useful for the student is in tying the economic story together with an analysis of the social and political responses to industrial growth. Thus he examines the social background of the 1848 revolution partly in terms of the strains caused by a developing but not yet developed industrial economy; looks at the economics of unification without ever assuming that Bismarck's final achievement was a simple consequence of purely economic factors; analyses the social consequences of the late nineteenth-century depression in terms of the generation of radical reactionary ideologies on the part of the Mittelstand; and discusses the economic background to German foreign policy before the First World War.

Kitchen's major theme is basically that economic change in Germany and the absence of political modernization—government controlled by and for the pre-industrial elite throughout this period—together meant that the system was unable to cope with new social tensions and that in a sense the ruling class ultimately opted for rational reform as a means of escaping from its dilemma.

This general theme is not original; and on the individual points the author is clearly heavily dependent on the work of Böhme, Rosenberg, Weber and Fritz Fischer among others. However, he does not accept their positions uncritically and to have all this material assembled in one place is a great boon.

In addition, Kitchen realizes the deficiencies of many widely held beliefs about German politics and society in this period. He sees that industry was far from homogeneous in class or economic interest or its political views and that its relationship with the agrarian elite was far less comfortable than many would have us believe. Having said this, however, the discussion of lower class responses to the problems created by the new industrial order in late nineteenth-century Germany is far less satisfactory. Although the organs created by the elite to mobilize mass support are discussed, little is said about the self-generated organizations of the petty bourgeoisie and absolutely nothing about that increasingly important social group, the white-collar proletariat, with its own far from uniform but quite distinct contribution to the political scene.

The discussion of labour's responses to exploitation and political disenfranchisement is equally unsatisfactory, concentrating mainly on formal institutions (party and unions) and this in a way that does not suggest acquaintance of some recent research. It will not do to attribute ideological incoherence on the part of the early socialist movement to the baneful influence of Lassalle; and to describe the Eisenach party as somehow more radical than that of Lassalle does not stand up to close examination. The idea of increasing revisionist dominance within the Social Democratic Party is also far from clearly established. More important than these questions of detail, however, is a failure to examine grass roots working-class reactions through patterns of strike activity or an analysis of the social composition of working-class militancy and organization. Any comprehensive account of social responses to industrialization would surely have to take these things into account.

Generally, therefore, this book is successful and useful in covering the wide ground of industrialization and elite responses to this but far too cursory on lower class grievances after the revolution of 1848.

Richard Geary

## Prussia

**A History of Prussia**  
by H. W. Koch  
Longman, £8.95 and £4.50  
ISBN 0 582 48189 9 and 48190 2

Many historians writing in English have tackled specific problems in Prussian history but not until the present has one produced a general history of the Prussian state. Koch's book admirably fills the gap and should long remain the standard work in its field.

To trace successfully the history of Prussia from its origins in a domestic span of over 700 years in less than 300 pages of text calls for a high degree of intelligence and a judicious choice of material. The author has achieved this with a refreshing lucidity and clarity in the development of his theme which makes for easy reading. Recent research has been assimilated, even to Fritz Stern's book on Bismarck and Bloch's book on the history of the Prussian state.

The book is the history of Germany, not Prussia, and its subject is the history of the German people, not the Prussian state. It is a history of the German people, not the Prussian state. It is a history of the German people, not the Prussian state.

Richard Geary

## Stuarts revisited

**Stuart England**  
by J. P. Kenyon  
Allen Lane, £6.50  
ISBN 0 7139 1087 9

The Pelican History of England, launched almost 30 years ago, marked a new departure in historical publishing. Previous historical series had consisted of workmanlike textbooks, aimed essentially at sixth-form and university students. The appeal of the Pelican series was much wider, extending to the intelligent general reader.

Each volume was written by a professional historian who sought to produce a book which was factually accurate and reflected modern research, but which was also readable, compact and inexpensive. The outcome was a series which has sold in vast numbers all over the world and which has done more than any other to inform the general reading public about English history. Moreover, even though the volumes were not intended as textbooks, they have been used as such by generations of students, with pleasure and profit.

Nevertheless, in time such general surveys are bound to appear a little outdated as new research challenges traditional interpretations and shifts the emphases of historical study. Such new research has been particularly apparent in the seventeenth century, which was covered by one of the weaker volumes in the original series. The publishers have therefore decided to bring out a new seventeenth-century volume by Professor Kenyon, who has already written extensively on the history of Stuart England.

Kenyon's book reflects strongly the new interpretations of the period which have become apparent over the past 10 to 15 years. It emphasizes the large measure of agreement between King and Parliament on the nature of the constitution and the essential conservatism of most MPs. Following Conrad Russell, he stresses the weakness of the early Stuart Parliament, and the likelihood of its disappearing altogether. He argues too that the Commons' behaviour was often so erratic and unrepresentative that Charles I. had sound grounds for believing that it threatened his legitimate authority.

Kenyon has little time for those who explain the Civil War in terms of social and economic change because it is unclear what was the impact of any changes that occurred on events and the taking of sides in 1642. He explains the outbreak of the war mainly in political and religious terms, giving due weight to mutual distrust and misunderstanding.

standing, to individual miscalculation and to sheer chance. He argues that the mounting unpopularity of the increasingly repressive and unrepresentative regimes of 1642-46 made the restoration of the monarchy inevitable.

Like other recent historians of the Restoration, he emphasizes the strengths rather than the weaknesses of the restored monarchy, strengths seen most clearly in the Tory reaction of 1681-84 and the "packing" of Parliament in 1685. Even after 1689 Parliament failed to exploit systematically the control it had gained over the crown's finances. Thus William III enjoyed considerable freedom of action and, Kenyon argues, Anne might have done so too, had she been able.

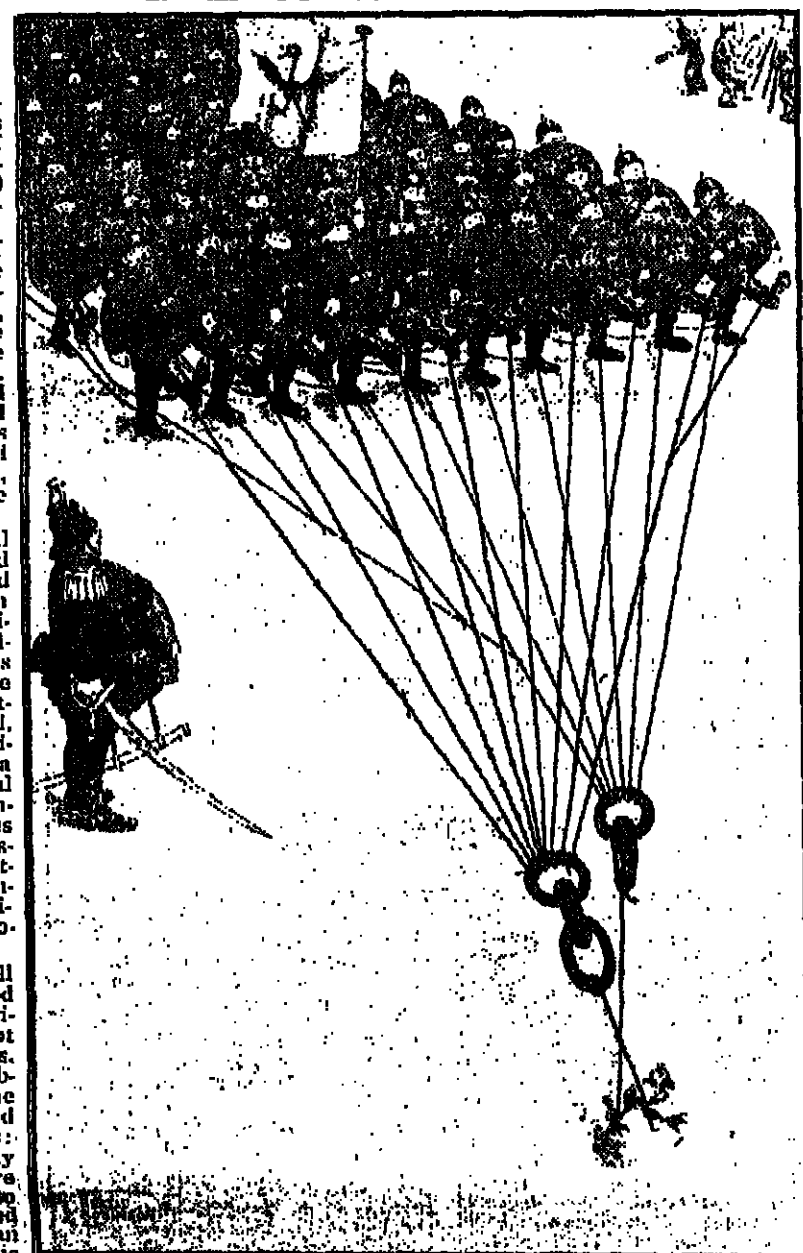
Kenyon thus emphasizes political and religious rather than social and economic matters, conservatism and continuity rather than radicalism and change. The recent on politics and religion might seem to indicate a return to the preoccupations of nineteenth-century historians like Gardiner, rather than those of post-war historians like Christopher Hill. However, the emphasis on continuity and conservatism marks a sharp break from the conventional idea of change (whether evolutionary or revolutionary) which is found in both older "Whig" historians and more recent Marxist historians, who have concentrated on the mainly political and religious "Whig" model into a socio-economic one.

Kenyon's view of the period will be familiar to many teachers and students, although it is far from universally accepted. But this is not just a rehash of other people's ideas. Kenyon himself has contributed substantially in his earlier works to the reinterpretation of the period and this book adds further new insights: for example, he argues persuasively that the civil war must have been a civil war, not a religious war, as was often claimed by historians.

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John Miller



A collection of Henth Robinson cartoons from the years 1915 to 1919 has been published, under the title *Heath Robinson at War*, by Duckworth at £3.95. This cartoon book, which is a first lesson in the history of the German Army, was his primary inspiration in the wartime series.

## This week's reviewers

Margaret Boden is author of *Purposive Explanation in Psychology*; Gordon Daniels is senior lecturer in Japanese studies at Sheffield University; Patrick Doran is head of European studies at the National Institute for Higher Education, Limerick; Richard Geary lectures in German studies at Lancaster University; Michael Howe is senior lecturer in psychology at Exeter University; John Miller's latest book is *James II: a study in kingship*; Rory Miller is at the Centre for

Latin American studies at Liverpool University; Michael Morgan is professor of psychology at Durham University; E. S. Northedge is professor of international relations at the London School of Economics; Paul Preston lectures in modern history at Queen Mary College, London; Keith Walker lectures in English at University College London; Dennis Welland is professor of American literature at Manchester University.

Patrick Doran

## BOOKS

## The computer's conception of the world

**Perceptions and Representations: the theoretical bases of brain research and psychology**  
by Keith Oakley  
Methuen, £7.00  
ISBN 0 416 86010 9

The hero of this book is the computer, and the villain is the reflex theory of behaviour: a theory which as Oakley cogently argues, still dominates, even if in a disguised form, much of physiological psychology.

Until the computer came on the scene the reflex was the only available mechanical model of the brain, and it was flooded to death. The new school of "artificial intelligence" argues that the computer provides a much richer series of metaphors for understanding the brain. Oakley believes that this intuition has failed to have the necessary impact on physiological psychology, and his book is a powerful and very clearly argued attack upon the conventional physiological psychology textbook.

One of Oakley's central themes is an idea previously made familiar by Richard Gregory. If the brain resembles a computer in its operation, what could we hope to learn about the brain by studying the traditional surgical and electrophysiological recording methods of brain research? Very little, the argument runs, because the results of interfering with a very complicated bit of computing machinery are likely to be uninterpretable without a well-formalized theory of the machine in the first place.

The interesting discoveries of physiology are held to be precisely those that can be interpreted in this way; the uninteresting ones, those which we have to explain, those for which we have no explanation, or which are inexplicable given any physical theory of the brain as it is.

The triumphs of physiology in the standard texts, it is argued, do not demonstrate no more than that behaviour depends upon the brain. They are surprising only if we have doubts about the brain hypothesis. If we do not have such doubts, why is it significant that the activity of the brain can be stimulated electrically to reward an animal; that cells in the brain respond when the animal sees a particular object;

or that cells in the hypothalamus change their responsiveness to stimuli when the animal is hungry? These discoveries are amazing to the layman, but it is not always clear that they seriously advance the subject.

There are some logical pitfalls in the sort of approach Oakley advocates, and although he is aware of them, it is not certain that they have been overcome. If we simply assume that the brain is, or is like, a general purpose digital computer, it is easy to make much of physiological psychology look pretty dull, and this Oakley does without difficulty.

There is something not quite logical here, unless it is the intention of the argument to show that physiological methods can establish merely that the brain is a computer, but not how it works. Another worrying aspect of this example is that in fact resistance to damage is not a striking feature of existing computers, as anyone who has had a machine fault can readily verify.

If this largely negative attack upon traditional methods (which takes up approximately the first quarter of the book) were all we had to go on, the case that the brain is a kind of computer would fail. But it is not the most important part of the case, and Oakley properly insists that there was no hardware fault, and that the user's software must be blamed. Finally convinced otherwise, he would switch the machine off at the mains, and after resuscitating it, start stuffing paper tapes through its mouth and ears. Silly, no doubt, and a gratuitous sneer; but then so too is Oakley's analogy, unless we concede his argument to start with.

As a matter of fact, Oakley says that this section of his argument against physiological psychology does not depend crucially upon the assumption that the brain is a computer. Several repetitions of this attempt to immunize the argument against accusations of *petitio principii* do not make it any more convincing. Presumably he means that the utility of current brain research would follow from the brain's being any conceivable kind of complex machine, and not just if it is a computer. But this is entirely in the realm of imagination, and whether in fact the brain is just the sort of machine that will frustrate the physiological approach presumably only the facts of brain research can decide.

## Committed to memory

**The Psychology of Learning and Memory**  
by Douglas L. Hintzman  
Prentice Hall, £8.20  
ISBN 0 167 0035 2

This book provides interesting descriptions of research into animal learning and memory.

Hintzman writes lucidly, in a readable style, and most of the time he has difficulty in understanding the content. Following an introductory chapter and one describing the history of experimental research on learning, there are five chapters on learning in animals. The first is an abrupt shift to the topic of human memory, to which five chapters are devoted. The book concludes with a chapter on memory and future projections.

The author successfully indicates the range for research having to do with memory, which has provided valuable insights into the relationships between memory and human learning, is dismissed in a somewhat unconvincing statement in the closing pages: "studying the mental abilities of children is especially difficult, and this is the main reason so little has been said about memory development in this book."

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Michael Howe

## Coming to an understanding

**Scripts, Plans, Goals and Understanding: an inquiry into human knowledge structures**  
by R. C. Schank and R. P. Abelson  
Wiley, £10.60  
ISBN 0 470 99033 3

When we read a simple text like this: "John went into a restaurant; the waiter did not come; he left," our understanding is apparently effortless and direct. We know that it was John, not the waiter, who left; what is more, we know why he did so. Explaining how we know this, or how we reason in drawing "obvious," "plausible" conclusions, is no simple matter.

This book addresses issues such as these, and is co-authored by a psychologist and a linguist: both of whom use a programming methodology to express and explore their theories of understanding. They discuss some of the different types of knowledge and various ways of using it that are required in the interpretation of natural language texts. Some of the knowledge is stereotyped, stored in structured "scripts" (such as the restaurant script tacitly invoked in the previous example), which identify typical roles, role-behaviour, and likely outcomes of expected actions.

These also anticipate some of the things that can go wrong (the waiter may not come) and what one might be expected to do if that happens (John will very likely leave in disgust).

When it comes to assessing just these facts the argument is on the horns of a dilemma. If the facts of brain research are held to justify the theory that the brain is a computer, then they have established something of importance and can hardly be reproached with utility. If they do not, we are back where we started. Actually Oakley tries to have it both ways. The finding that the brain survives considerable damage without drastic disturbance of function. This is simultaneously held to show how little we can learn from the lesioning technique, and that the brain is thereby demonstrated to have the flexibility and goal directedness of a computing device.

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## Polytechnics continued

ULSTER COLLEGE  
THE NORTHERN IRELAND POLYTECHNIC

## Faculty of Social and Health Sciences

LECTURER II OR SENIOR LECTURER  
—PHYSIOTHERAPY

Applications are invited from suitably qualified physiotherapists in both the degree and diploma courses. An appointment at the senior lecturer level would require the acceptance of a clearly defined area of responsibility over and above contribution to teaching and research. Applicants should have appropriate professional qualifications and show evidence of post-graduate development. A short-term appointment for one or two years would be considered for a suitable candidate and would allow experience to be gained in teaching and developing the first and only degree course in Physiotherapy in the United Kingdom.

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—DEVELOPMENTAL PSYCHOLOGY

Applications are invited for the above post. The successful applicant will contribute to the teaching of Developmental Psychology in a range of degree and non-degree courses; an interest in Psycholinguistics would be an added advantage.

Salary Scales: Senior Lecturer — £6,051-£7,065/£7,372  
Lecturer II — £4,101-£6,558  
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The Polytechnic is a direct grant institution with an independent Board of Governors. It opened in 1971 and now has a student population of some 7,100. It has extensive new purpose-built accommodation, including 750 residential places on the 114 acre campus overlooking the sea at Jordanstown, a pleasant and quiet residential area. There is a scheme of assistance with removal.

Further particulars and application forms which must be returned by October 2, may be obtained by telephoning Whitehead (0231) 6531 ext. 2243 or by writing to: The Establishment Officer, Ulster College, The Northern Ireland Polytechnic, Shore Road, Newtownabbey, Co. Antrim BT37 0QB.

THE POLYTECHNIC  
HUDDERSFIELD  
SENIOR LECTURER  
APPOINTMENTS & CAREERS OFFICER  
Ref: ACA/228/B

Applications are invited from persons qualified to assume the responsibilities of this post which includes careers counselling, the provision of up to date information on opportunities and liaison with external organisations. The successful candidate will be involved in other aspects of related work under the general direction of the Head.

Salary: SL25,523-£6,447 (Bar)

Further details and application forms, which should be returned by 15 September 1978, from the Establishment Officer, The Polytechnic, Queensgate, Huddersfield, HD1 3DH (Telephone 0484 22288, Ext 2228).

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## LIVERPOOL

THE POLYTECHNIC  
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RELATIONS

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Applications are invited from suitably qualified persons to fill the post of Lecturer II in Marketing. The successful candidate will be responsible for the teaching of Marketing in the Department of Social Relations. The post is a full-time position and involves a significant contribution to the development of the Department.

Further details and application forms can be obtained from the Personnel Officer, Liverpool Polytechnic, 100 Victoria Road, Liverpool L69 3GB.

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AND LIFE SCIENCES  
DEPARTMENT OF  
PHARMACYResearch  
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THE POLYTECHNIC  
DEPARTMENT OF HEALTH  
STUDIES

## LECTURER II IN NURSING

Applications are invited from suitably qualified persons to fill the post of Lecturer II in Nursing. The successful candidate will be responsible for the teaching of Nursing in the Department of Health Studies. The post is a full-time position and involves a significant contribution to the development of the Department.

Further details and application forms can be obtained from the Personnel Officer, Newcastle Polytechnic, 100 Victoria Road, Newcastle upon Tyne NE4 6BE.

LANCHESTER  
THE POLYTECHNIC  
FACULTY OF ART AND  
DESIGNLECTURER II IN  
INDUSTRIAL DESIGN

Applications are invited from suitably qualified persons to fill the post of Lecturer II in Industrial Design. The successful candidate will be responsible for the teaching of Industrial Design in the Faculty of Art and Design. The post is a full-time position and involves a significant contribution to the development of the Department.

Further details and application forms can be obtained from the Personnel Officer, Lancaster Polytechnic, 100 Victoria Road, Lancaster LA1 4YW.

NORTH LONDON  
THE POLYTECHNIC  
DEPARTMENT OF FOOD  
SCIENCELECTURER II IN  
NUTRITION AND FOOD SCIENCE

Applications are invited from suitably qualified persons to fill the post of Lecturer II in Nutrition and Food Science. The successful candidate will be responsible for the teaching of Nutrition and Food Science in the Department of Food Science. The post is a full-time position and involves a significant contribution to the development of the Department.

Further details and application forms can be obtained from the Personnel Officer, North London Polytechnic, 100 Victoria Road, North London N4 4JL.

LONDON  
THE POLYTECHNIC  
SCHOOL OF SURVEYINGSENIOR LECTURER IN  
SURVEYING

Applications are invited from suitably qualified persons to fill the post of Senior Lecturer in Surveying. The successful candidate will be responsible for the teaching of Surveying in the School of Surveying. The post is a full-time position and involves a significant contribution to the development of the Department.

Further details and application forms can be obtained from the Personnel Officer, London Polytechnic, 100 Victoria Road, London EC1A 3BB.

SUNDERLAND  
THE POLYTECHNIC  
FACULTY OF HUMANITIES  
DEPARTMENT OF BUSINESSLECTURER II IN  
MARKETING

Applications are invited from suitably qualified persons to fill the post of Lecturer II in Marketing. The successful candidate will be responsible for the teaching of Marketing in the Faculty of Humanities. The post is a full-time position and involves a significant contribution to the development of the Department.

Further details and application forms can be obtained from the Personnel Officer, Sunderland Polytechnic, 100 Victoria Road, Sunderland SR6 1JL.

SURREY  
KINGSTON POLYTECHNIC  
DEPARTMENT OF  
NURSINGLECTURER II IN  
NURSING

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## Research Posts

LANCHESTER  
THE POLYTECHNIC  
FACULTY OF APPLIED  
SCIENCEAPPOINTMENT OF RESEARCH  
ASSISTANTS

Applications are invited from suitably qualified persons to fill the post of Research Assistant. The successful candidate will be responsible for assisting in research projects in the Faculty of Applied Science. The post is a part-time position and involves a significant contribution to the development of the Department.

Further details and application forms can be obtained from the Personnel Officer, Lancaster Polytechnic, 100 Victoria Road, Lancaster LA1 4YW.

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Colleges and  
Institutes of Higher  
EducationDerby London  
College of Higher  
EducationSchool of Education  
Social Studies  
Senior Lecturer  
Lecturer Grade II

Applications are invited from suitably qualified persons to fill the post of Senior Lecturer. The successful candidate will be responsible for the teaching of Social Studies in the School of Education. The post is a full-time position and involves a significant contribution to the development of the Department.

Further details and application forms can be obtained from the Personnel Officer, Derby London College of Higher Education, 100 Victoria Road, Derby DE1 1AA.

Human Movement  
Studies to Specialise  
in Dance

Applications are invited from suitably qualified persons to fill the post of Lecturer in Human Movement Studies. The successful candidate will be responsible for the teaching of Human Movement Studies in the School of Education. The post is a full-time position and involves a significant contribution to the development of the Department.

Further details and application forms can be obtained from the Personnel Officer, Derby London College of Higher Education, 100 Victoria Road, Derby DE1 1AA.

Senior Lecturer  
£8,051-£9,065/£9,372

Applications are invited from suitably qualified persons to fill the post of Senior Lecturer. The successful candidate will be responsible for the teaching of Social Studies in the School of Education. The post is a full-time position and involves a significant contribution to the development of the Department.

Further details and application forms can be obtained from the Personnel Officer, Derby London College of Higher Education, 100 Victoria Road, Derby DE1 1AA.

Lecturer Grade II  
£4,101-£6,558

Applications are invited from suitably qualified persons to fill the post of Lecturer Grade II. The successful candidate will be responsible for the teaching of Social Studies in the School of Education. The post is a full-time position and involves a significant contribution to the development of the Department.

Further details and application forms can be obtained from the Personnel Officer, Derby London College of Higher Education, 100 Victoria Road, Derby DE1 1AA.

COLLEGE  
INFORMATION  
OFFICER

Applications are invited from suitably qualified persons to fill the post of College Information Officer. The successful candidate will be responsible for providing information to prospective students. The post is a part-time position and involves a significant contribution to the development of the Department.

Further details and application forms can be obtained from the Personnel Officer, Derby London College of Higher Education, 100 Victoria Road, Derby DE1 1AA.

Fellowships and  
Studentships

Applications are invited from suitably qualified persons to fill the post of Fellowships and Studentships. The successful candidate will be responsible for administering fellowships and studentships. The post is a part-time position and involves a significant contribution to the development of the Department.

Further details and application forms can be obtained from the Personnel Officer, Derby London College of Higher Education, 100 Victoria Road, Derby DE1 1AA.

LONDON  
UNIVERSITY OF LONDON  
KING'S COLLEGE  
DEPARTMENT OF  
EDUCATIONLECTURER II IN  
MARKETING

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LECTURER II IN  
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